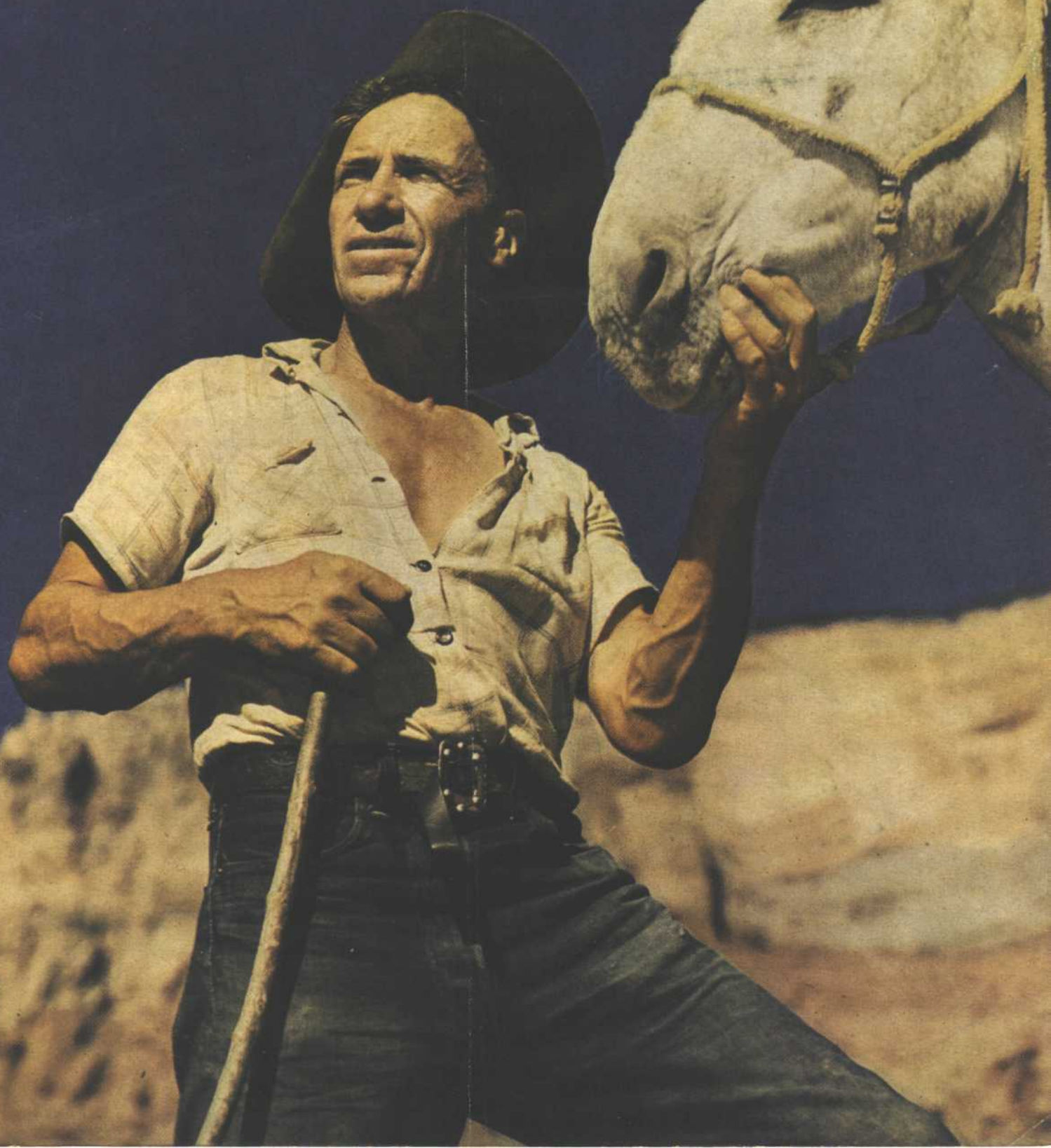
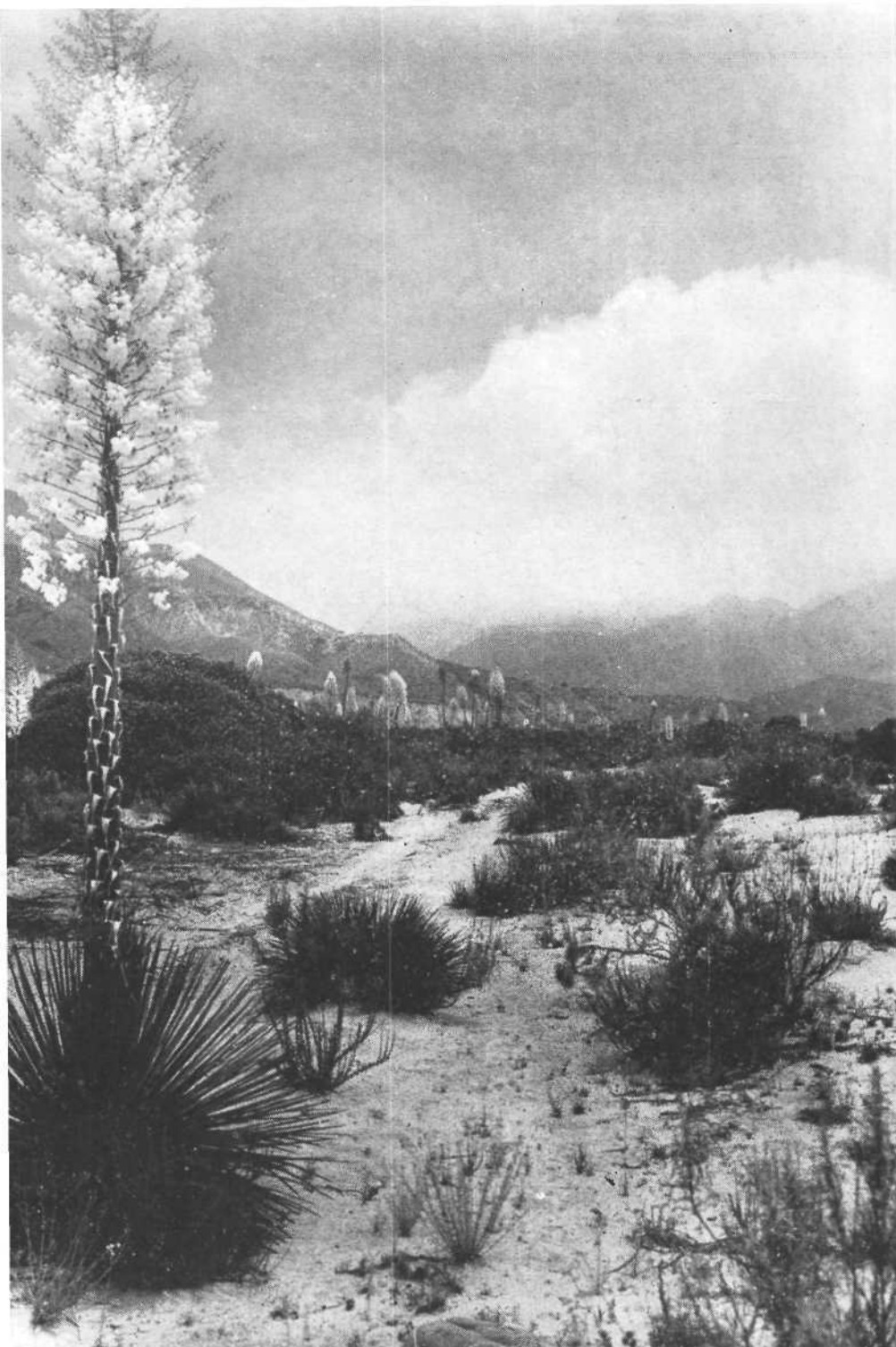


Desert

SEPTEMBER, 1952 . . . 35 Cents





ripples ON THE DESERT SAND

By GASTON BURRIDGE
Downey, California

We weigh a star beyond our eye
And fail to know the man upon our right.
We search the atom for its secret tie
Unmindful of our starving brother's plight.
And just as human as each thing we do
Is failure to admit that this is true.

DESERT ECSTASY

By W. RODGERS and R. FISHER
Phoenix, Arizona

Beauty for so many souls
Is landscaped, terraced and graded.
Give me nature's sod to tread
Just as Mother Nature made it.

Though far removed from haunts of man
Knowing not the stench of filthy town.
Though whipped by wind and stinging sand,
A tiny blossom in ecstasy, hugs the ground.

THE SOUTHWEST

By GRACE BARKER WILSON
Kirtland, New Mexico

A turquoise canopy hangs overhead,
And sunshine of pure gold dots all the land,
From snow-capped mountains where the sky-gods stand,
Across the timbered slopes, where streamlets thread
Their devious ways from the great watershed;
And o'er the wide expanse of desert sand,
Whose stony towers and craggy mesas grand
Give gradual place to growing fields, that spread
Their green abundance that men may have bread.
Those only who have dwelt here understand
The measure of the greatness God has planned
For souls that open, yearning to be fed.
This great Southwest, apart from man-made strife,
Not just a place, it is a way of life.

Enchanted Basin

By MARGARET HORMELL
North Palm Springs

At the end of a road that is red and awry,
Where the compass of desert converges with sky,
Lies a basin where yucca and juniper grow,
And the colors, intensified, shimmer and glow
In a circle of hillocks as red as the road,
Wherein silence is music, and wind-song's an ode
To the memory of men of an ancient caste;
In the nocturnal stardust their phantoms file past.
Therein time on a peg of eternity swings
In a medley of dreams about primitive things,
And all harassing fancies are lost, or subdued,
In the infinite peace of its vast solitude.

MIDSUMMER HEAT

By MARGARET HORMELL
North Palm Springs, California

Midsummer heat has wrought a holocaust
For all but poet and fool.
To him who highly rates the solid things
Of earth, which he can grasp with fingers sure,
The torrid ghouls are cruel—
Alas, he cries in vain, "Cool! Cool!"

But those who dream may see in casual spray
A million limpid dewdrops,
That quench the dancing ghouls, as cool,
cool, cool,
They drip, from verdant athel boughs, and splash
Into a shaded pool.

LAND OF MY DREAMS

By MARY PERDEW
Santa Ana, California

I long for the sweep of unfenced lands:
Mountain, mesa, and gray trackless sands,
Rock-lined canyons deep and wide,
Washes where rivers rush and subside,
Grim, rugged peaks standing guard like portals
Barring the steps of marauding mortals,
Winds blowing free, wide skies azure blue,
And sharp thorns close set round blooms of bright hue.
I love the sweep of unfenced lands
With barriers wrought only by Nature's hands.

Man

By TANYA SOUTH

Here do I stand: The root and the foundation,
Result of all the lives I've ever lived—
The substance and the sum and culmination
Of all the good and bad my soul has sieved.

Here do I stand. No power on earth
can break me,
Save I myself break with the yoke I bear.
God in His mercy never shall forsake me,
And ever shall I onward, upward fare.

DESERT CALENDAR

- Aug. 29-30 — Tooele County Fair, Tooele, Utah.
- Aug. 29-Sept. 1—Elko County Fair, Elko, Nevada.
- Aug. 29-Sept. 1 — Annual Fiesta, Santa Fe, New Mexico.
- Aug. 30-Sept. 1—Desert Peaks Section, Southern California Chapter, Sierra Club, hike up the Thumb, Sierra peak in Southern Calif.
- Aug. 30-Sept. 1—Fallon '49 Show, Fallon, Nevada.
- Aug. 30-Sept. 1—Old Time Mining Celebration, Randsburg, California.
- Aug. 30-Sept. 1 — Annual Nevada Rodeo, Winnemucca, Nevada.
- Aug. 31-Sept. 1—Annual Labor Day Rodeo, Williams, Arizona.
- Aug. 31-Sept. 1—World Championship Steer Roping, Clovis, New Mexico.
- Aug. 31-Sept. 1—Annual Labor Day Rodeo, Benson, Arizona.
- Sept. 1-5—Annual Rodeo, Silver City, New Mexico.
- Sept. 2—St. Stephen's Fiesta, Acoma Indian Pueblo, New Mexico.
- Sept. 4-6 — Sanpete County Fair, Manti, Utah.
- Sept. 4-7—Antelope Valley Fair, Lancaster, California.
- Sept. 5-7—Mojave Trail Exposition and Panorama, Barstow, California.
- Sept. 6—Seventh Annual Dick Wick Hall Day, Salome, Arizona.
- Sept. 6-8—Harvest Dance, San Ildefonso Pueblo, New Mexico.
- Sept. 11-13 — Southern Utah Livestock Show, Cedar City, Utah.
- Sept. 12-14 — Colfax County Fair, Springer, New Mexico.
- Sept. 12-14—Valencia County Fair, Belen, New Mexico.
- Sept. 13-21—Utah State Fair, Fairgrounds, Salt Lake City.
- Sept. 16—Mexican Independence Day, Las Cruces, New Mexico.
- Sept. 17-19—Curry County Fair, Clovis, New Mexico.
- Sept. 19 — Annual Fiesta, Laguna Pueblo, New Mexico.
- Sept. 19-20 — Hidalgo County Fair, Lordsburg, New Mexico.
- Sept. 19-20 — Union County Fair, Clayton, New Mexico.
- Sept. 19-21—Northern New Mexico Fair, Santa Fe, New Mexico.
- Sept. 20-21—Annual Prescott Quarterhorse Show, Prescott, Arizona.
- Sept. 20-21—Sheriff's Posse Rodeo, Lordsburg, New Mexico.
- Sept. 23—Roosevelt County Fair and Rodeo, Portales, New Mexico.
- Sept. 24-28—Dona Ana County Fair, Las Cruces, New Mexico.
- Sept. 27-Oct. 6—New Mexico State Fair, Albuquerque.
- Sept. 29-30—San Geronimo Fiesta, Taos, New Mexico.



Volume 15

SEPTEMBER, 1952

Number 9

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RANDALL HENDERSON, Editor
BESS STACY, Business Manager

MARGARET GERKE, Associate Editor
MARTIN MORAN, Circulation Manager

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Address Correspondence to Desert Magazine, Palm Desert, California



Recent photograph of Matt Roy Thompson. He was the man who built Scotty's Castle in Death Valley.



Death Valley Scotty in the doorway of the palatial home built for him by the Johnsons. Frasher's Photo.

He Built Scotty's Castle...

A school-day romance at Stanford led to the selection of Matt Roy Thompson as the man to build the palatial mansion in Death Valley known as Scotty's Castle. Six hectic years were devoted to the building of this million dollar palace in a remote desert canyon—and even then it was not finished, for reasons made clear in this story.

By RANDALL HENDERSON

ALBERT AND Bessie Johnson furnished the money for the building of the fabulous Scotty's Castle in Death Valley. Walter (Death Valley) Scott gave name and publicity to the project. Matt Roy Thompson was the construction engineer who planned and directed the work. For six years—from 1925 to 1931—Thompson was the boss on the job.

It was from Thompson that I learned the story. Still healthy and alert, he works every day on his job as principal civil engineer in the Los Angeles office of Holmes & Narver, Inc., engineers and constructors who

specialize in military and naval installations all over the world.

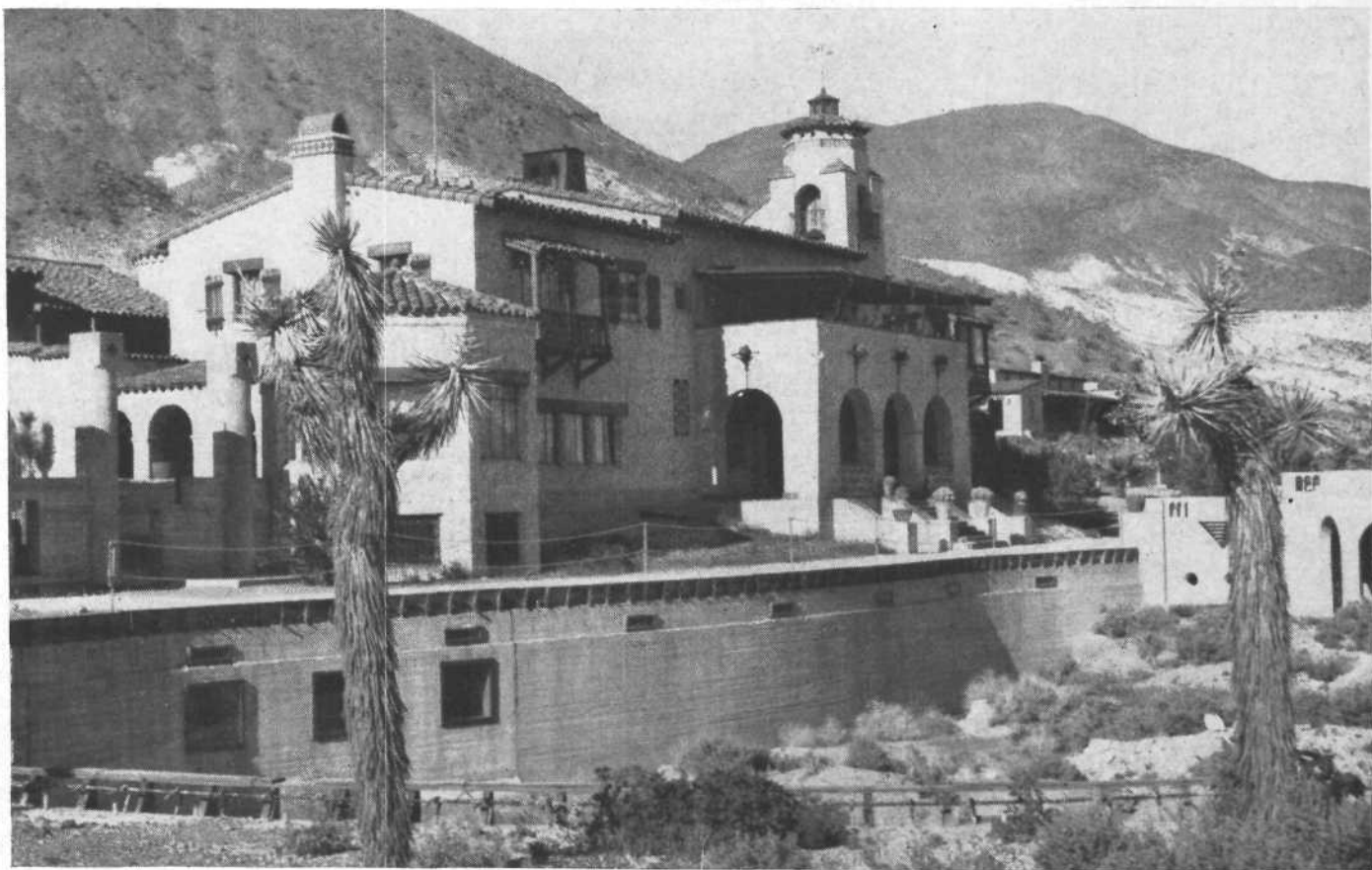
We sat in the living room of the spacious Thompson home in Pasadena recently—Matt, his wife Ivah, Cyria and I—while he recalled with amazing memory for details the story of his six-year association with the Johnsons and Scotty in Death Valley.

While the construction of the Castle was not started until 1925, the story of its architectural design, and the selection of Matt Roy Thompson as the man to do the building job, goes back much earlier than that. It is a story in which Stanford University played an important role.

Stanford opened its doors as an institution of higher learning in 1891. Matt Roy was one of the first to register in the new western school. Having had a year's engineering work at Rose Polytechnic in Terre Haute, Indiana, he entered Stanford as a sophomore. He was 17.

In the social life of the school he met a pretty blonde freshman, Bessie Morris Penniman. Her father owned a large ranch and orchard at Walnut Creek east of Oakland. It is now known as Johnson's Shadelands Ranch.

"Bessie and I attended the first football game between Stanford and the University of California at Haight



Recent photograph of Scotty's Castle in Death Valley. This and adjoining buildings were erected as a private home for Mr. and Mrs. Albert M. Johnson and Death Valley Scotty. Unfinished swimming pool is in the foreground.



Until Johnson brought his millions into the partnership this was the cabin in which Scotty lived in Death Valley—when he was not on the road with Buffalo Bill. Albert Johnson in the doorway. Frasher's Photo.



Bessie and Albert Johnson, with Death Valley Scotty in the middle—photographed in the living room soon after the Castle was furnished. Frasher's Photo.

Street Park in San Francisco," Matt Roy recalls. "Stanford, playing under the management of a 17-year-old freshman named Herbert Hoover, won the game 10 to 7."

In the financial panic of 1893 Matt's father, in the real estate business in Tacoma, Washington, met with financial reverses, and young Thompson had to leave school. A year later Bessie Penniman transferred to Cornell. At first they corresponded regularly. Then she met a rich young engineering student named Albert M. Johnson—and letters became less frequent. A year or so later Matt Roy and his bride, Patience O'Hara Thompson, received the announcement of Bessie's marriage to Johnson.

During the 30 years which followed he kept contact with the Johnsons, and saw them occasionally. In the meantime Matt Roy had made notable advances in his own career as a construction engineer and appraisal expert. He was a member of the Interstate Commerce Commission's appraisal board with an office in Washington, D. C., in 1925 when, without any previous hint as to what it was all about, he received a telegram from Albert Johnson in Chicago asking him to take

charge of some building improvements in Death Valley, California.

"I went to Chicago to discuss the project more in detail with Johnson," said Matt Roy, "and it had a strong appeal. I asked my department chief in Washington for a year's leave of absence, and accompanied the Johnsons to Death Valley.

"At that time Johnson was reputedly worth \$60,000,000, and was the owner of the National Life Insurance company of Chicago. His back had been broken in 1899 in a railroad wreck in which his father had been killed, and after he recovered enough to move around he decided to go West and rough it in an effort to regain his strength.

"He arranged with Walter Scott, who as a cowboy in Buffalo Bill's Wild West show from 1890 to 1902 had been widely billed as Death Valley Scotty, to accompany him on his journeys into the desert. Scotty had punched cattle, skinned mules and prospected in Nevada and California during his younger days and knew the region well.

"Just when the idea of a palatial home on the desert was born, I do

not know, but when I arrived in Death Valley with the Johnsons, some improvements already had been made on the Grapevine Canyon site in upper Death Valley. These consisted of a large two-story box-like stucco building about 40x150 feet which was used as a hide-away camp and storage room by Scotty and Johnson. Also, there was an L-shaped garage about 250 feet long near the other building.

"I was assigned office space and comfortable living quarters in the front end of the garage, and with the exception of a few weeks' vacation each summer, I lived there alone for six years."

Stories have been current that Johnson originally had plans drawn for his desert retreat by Frank Lloyd Wright, the noted architect, but Thompson stated that he never saw such plans and never heard them referred to.

Actually, the architectural detail of the Castle was suggested by the buildings on the Stanford campus. Matt Roy recalled the words of President David Starr Jordan on the occasion of his inaugural address at Stanford October 1, 1891: "these long corridors with their stately arches . . . will occupy a warm place in every student's



Scotty's bedroom in the Castle. It is said that Death Valley Scotty has never slept in it. Frasher's Photo.



Music room in the Castle. The pipe organ is in the alcove on the left. Frasher's Photo.



Albert M. Johnson, left, and Matt Roy Thompson, with huge glyph covered rock brought in from a nearby canyon to decorate the Castle yard. Frasher's Photo.

heart . . . never to be rubbed out in the wear of life."

It was a prophecy that had made a deep impression on the new sophomore at Stanford. Matt Roy could envision the ugly box-like structure which Johnson and Scotty had erected, completely transformed by the addition of a series of Stanfordesque arches, and crowned with red tile along the good old Stanford lines.

"I made a pencil sketch showing the lines of the transformed mansion as I proposed to build it," recalls Thompson. "Johnson protested, saying he preferred the rectangular type of architecture because it symbolized that

everything he did was on the square. But Bessie had a warm place in her heart for Stanford and she liked my sketches. In the end she had her way, and with some compromises the structure was planned and built as it appears today.

"We undermined the old building with a full concrete-walled basement from which tunnels radiated to the other structures in the group. The old walls were trebled in thickness by adding hollow-tile veneer and insulating them against desert heat by filling them with insulux, a powder which with the addition of water expanded to 12 times its original volume. It

dries into a porous stone-like substance.

"Water was piped from the springs a mile up the canyon—enough to supply a population of 1000 persons, provide hydro-electric power and fill the swimming pool. An immense solar-heater was designed and built to supply hot water for the half dozen kitchens and the dozen gorgeously-tiled bathrooms.

"The ties of the abandoned Tonopah & Tidewater railroad, from Beatty to Tonopah, were purchased—120,000 of them. They were bought for \$1500, and it cost \$25,000 to gather them up, haul them to our building site over almost impassable roads, and stack them in a little tributary gorge now known as Tie Canyon. It was estimated they would provide fuel for the 18 fireplaces in the Castle for 150 years. Long tiers of them remain today where they were stacked 25 years ago.

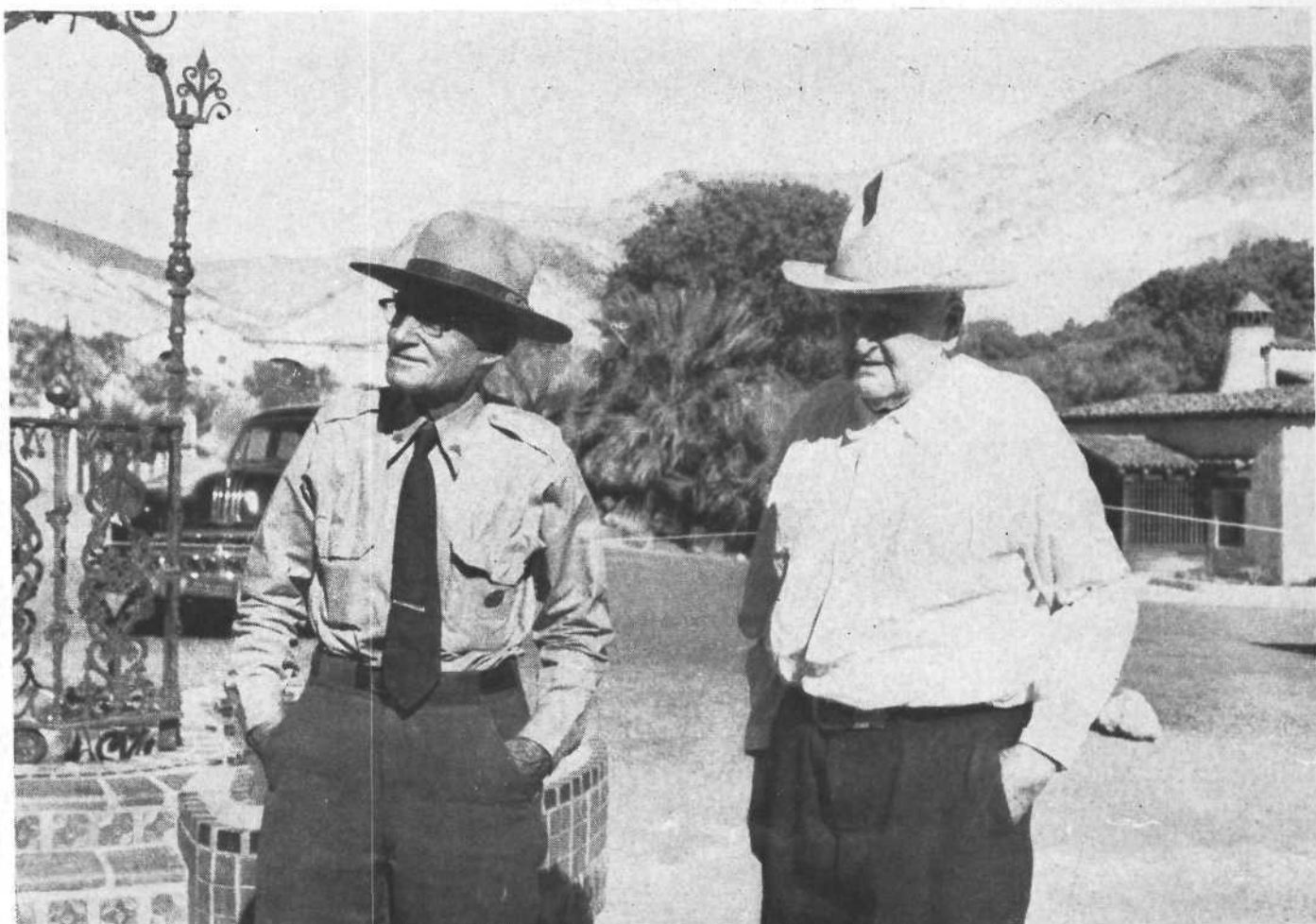
"A huge pipe organ was installed, with the largest set of chimes west of Chicago at that time. No expense was spared, either in the construction or in the furnishings which went into it. Johnson said we would build to last 100 years.

"Costs were high due to the remoteness of the site, and probably no one will ever know what the final total amounted to. It was in excess of a million dollars, I am sure, and might have added up to nearly a million and a half."

Workers for the project were recruited mostly from two sources: The Shoshone Indian camps in Death Valley, and the employment offices in Los Angeles. The Shoshones did much of the manual labor and as many as 70 of them were employed at one time. It was in the Los Angeles employment offices that they found the highly skilled Austrian wood-carvers who did the beautiful and intricate designs of the interior beams and wood finish. The detail sketches for the beams and trusses were created by Martin Devy de Dubovey, a Los Angeles architect. The actual carving and construction of these features was done at the Castle under the direct supervision of H. Brewster Brown of Inglewood, California. Landscaping of the Castle grounds was done by Dewey R. Kruckeberg of Glendale.

Albert Johnson was essentially a business man and neither he nor Scotty contributed much to the creative detail of the Castle construction. However, Bessie Johnson had a great deal of creative artistry and she shares with Matt Roy Thompson the credit for the beauty of the Castle, both as to general design and as to interior finish and furnishings.

Some of the furnishings were pur-



Recent picture of Death Valley Scotty, with Superintendent Ray Goodwin of the Death Valley National monument on left. Photo taken on the Castle grounds.

chased personally by the Johnsons on trips abroad. C. Alexander McNeillage also contributed to the interior design and served in the role of purchasing agent, and until he and Johnson had a serious disagreement, he was sent to Europe on buying trips.

One of the many details assigned to Thompson was the casting of reinforced cement posts to enclose with a wire fence the 1270 acres to which Scott and Johnson acquired a federal patent. All the posts were cast bearing Scotty's and Johnson's initials. Johnson once complained to Thompson that Scotty's initials were above Johnson's on too many of the posts.

Until the Tonopah & Tidewater railroad discontinued its service, materials for the Castle were shipped over this rail line to the Bonnie Clare mine, near the head of Grapevine Canyon. The Bonnie Clare had been a boom mining camp, with a postoffice and a store. Later materials were trucked in from Los Angeles, Las Vegas, Beatty and other points.

Until their insurance company met with financial difficulties in 1933, the Johnsons spent most of their time in Chicago, making only occasional trips

to Death Valley. Thompson was in complete charge in their absence. However, all plans were submitted to the Johnsons either by mail or in person before they were carried out.

At the beginning of the project Johnson arranged for Scotty to counter-sign the checks issued for material and labor. But after three months of this Scotty threw up his hands. He did not like clerical work, and after that, checks were honored on Thompson's signature only.

Scotty referred to the new mansion as "the Castle" and this name gradually was adopted. During the construction days an ever increasing number of visitors swarmed over the place. As it was intended exclusively as a private residence for the Johnsons and Scotty, these visitors were given generous hospitality. Matt Thompson estimates that more than 5000 of them were freely "fed and bedded down" as Scotty would say, during the construction period. Sometimes their cars were repaired and they were given gasoline without charge.

"But when the Castle was nearing completion," says Matt Thompson, "and the owners were ready to move in and enjoy the seclusion they had

sought in building this place, the visitors kept coming. Finally a white sign was erected at the entrance gate: 'THE CASTLE IS CLOSED. POSITIVELY NO ADMITTANCE.'

"The white sign soon looked like a bulletin board, covered with hundreds of protesting epithets penciled by tourists who in many instances had driven hundreds of miles to see the Castle. These protests eventually became so vociferous that the Castle was thrown open for guided tours at a fee of \$1.00 a person.

"When work on the Castle proper was stopped in the fall of 1931, there were several unfinished features, including the 85x185 foot swimming pool in front of the main building. The concrete walls of the pool were poured, and the beautifully glazed tile for finishing it had been received and stored in the maze of tunnels when work was discontinued. The tile remains there in storage today.

"Johnson intended to complete the construction some day. He wrote to me in 1947 asking if I could resume work on the project. The letter was forwarded to me on Okinawa Island where I was helping in the construction of a military installation. Later

when I returned to the United States we discussed the matter in his Hollywood home where he was confined by illness. He passed away in January, 1948, without having recovered sufficiently to get the work started.

"Bessie had met a tragic death in 1941 when the car in which the Johnsons were riding skidded and overturned near Panamint Springs. Johnson suffered only minor injuries. They had no children."

The problem of erecting so palatial a structure as Scotty's Castle in a place so remote as Death Valley's Grapevine Canyon in 1925 would have frightened an engineer less resourceful than Matt Roy Thompson. He had done much engineering and construction work since his Stanford days, but never under such difficult conditions.

The distance from sources of supply, the lack of adequate roads, the absence of skilled labor in the immediate vicinity, the eccentricities of his boss—for Johnson was a man of many interests and many moods—all these things added up to a tough assignment. But to Matt Thompson they merely were a challenge, and Scotty's Castle as it stands today is a fine testimonial to the manner in which he met and overcame the obstacles.

Thompson was born in Dunlap, Iowa, in 1874. In 1885 he moved with his parents to Chattanooga, Tennessee, where his father was in the banking business. But there was the blood of frontiersmen in the Thompson family and in 1887 they came west to Tacoma, Washington Territory, where Matt Roy was graduated from high school at the age of 16.

He was an apt student, and his year at Rose Polytechnic and two years at Stanford gave him virtually the equivalent of a full college course in engineering.

During the 30 years which elapsed between Thompson's Stanford days and his arrival in Death Valley with the Johnsons he had a rich and varied experience in the field of engineering and construction. He had served as a county engineer, assistant state engineer, and state highway superintendent in Washington, had engineered and superintended a subdivision project for Major Bowles of radio fame, and had spent several years away from his Tacoma home as an appraisal engineer for various railroads in 25 states, earning a good living for his family of five growing children.

This last experience had led him eventually to a responsible position with the Interstate Commerce Commission, and it was from this post that

he resigned to work for Johnson. He secured a year's leave, and when it became evident that the Death Valley project would extend over several years, he gave up the federal job.

During the planning of the Los Angeles Colorado River aqueduct he was senior appraiser for the Metropolitan Water District, and spent much time on the Colorado and Mojave deserts. In 1942 he helped lay out the Mojave Air Base for Kisner, Curtis & Wright, and later the Roosevelt Base on Terminal Island. He has been with Holmes and Narver the last nine years.

It was during the last few months of construction of Scotty's Castle that, among the thousands of visitors, he met his present wife, Ivah Thaxton Thompson. They spent their honeymoon in the finished Castle as guests of the Johnsons. Ivah has accompanied her husband on most of his widespread travels since then.

Matt Roy and Walter Scott have remained good friends down through the years, and they get together frequently at the Castle to recall the days when Thompson was building a palace that's "all too fancy for an old desert rat like me."

Following his death in 1948 it was disclosed that Johnson had bequeathed the Castle and other holdings to a non-profit religious organization, the Gospel Foundation of California, with provision that Walter Scott was to be provided with a home as long as he lives, and that all profits from tourist admissions to the Castle were to be used for charitable purposes. The funds are being ably administered by a board of which Mary E. Liddecoat, Los Angeles social worker, is the head.

A beautiful room in the Castle was provided for Scotty, but it is said that he has never slept in it. When visitors became too numerous at the Castle he moved to a little cabin over the hill a mile and a half away and lived there alone until last fall when a crippled foot made it necessary for him to spend nine weeks in the hospital at Las Vegas. After leaving the hospital Scotty returned to the Castle where he occupies a back room and sees visitors only when he chooses to do so. Scotty doesn't care for the "damned emigrants" who swarm over the Castle in guided herds every day. But he always has a warm reception for old friends who come to visit him.

Prizes For Desert Photographs

On the desert the air is clear, and the sun is shining so much of the time that photographers seldom have to contend with murky atmosphere. But while the sky is seldom overcast, there are many days when fleecy cloud effects provide beautiful backdrops for desert photography.

Desert Magazine's Picture-of-the-Month contest enables this magazine's readers to share the best of the pictures taken by amateur and professional photographers. Any subject which is essentially of the desert is qualified for entry in this contest.

Entries for the September contest must be in the Desert Magazine office, Palm Desert, California, by September 20, and the winning prints will appear in the November issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

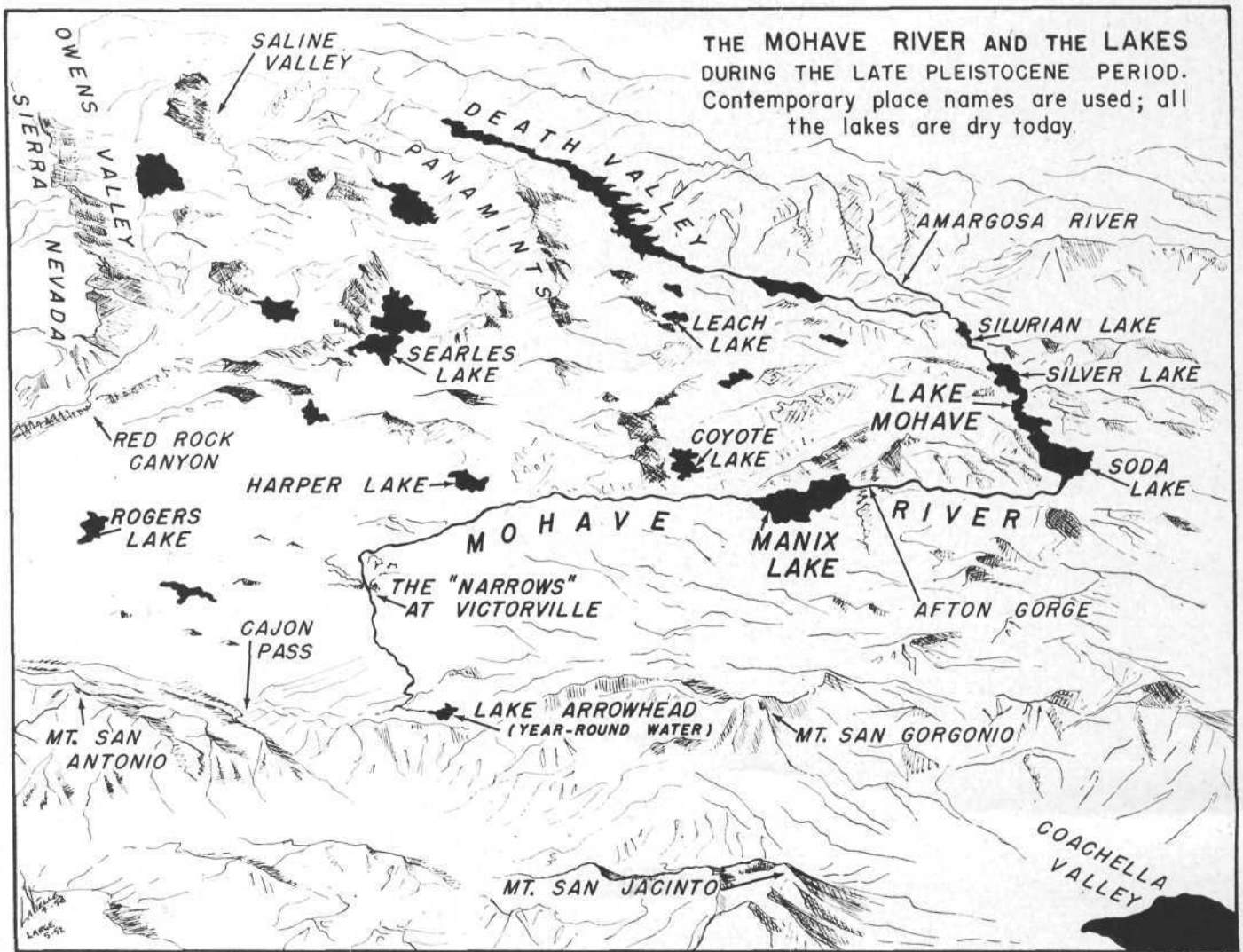
HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA



This sketch was made from the relief map of California displayed at the State Exposition building in Los Angeles.

When Ancients Dwelt on the Shores of Old Lake Mohave

Baker, California, on U. S. Highway 91, is a friendly little oasis where many motorists stop for service and refreshment after crossing the many miles of desert which extend in all directions from the town. Not many of the motorists who pass this place realize that in the pre-historic past this desert community was submerged under 30 to 40 feet of water—and that around the shoals of the great fresh water lake that covered this area there lived a greater population of primitive human beings than there are white people in the region today. The Lawbaughs were not the first to discover the evidence of an ancient Indian culture in this area, but theirs has been the most exhaustive study of this archeological field to date.

By A. LA VIELLE LAWBAUGH
Art and photos by the author

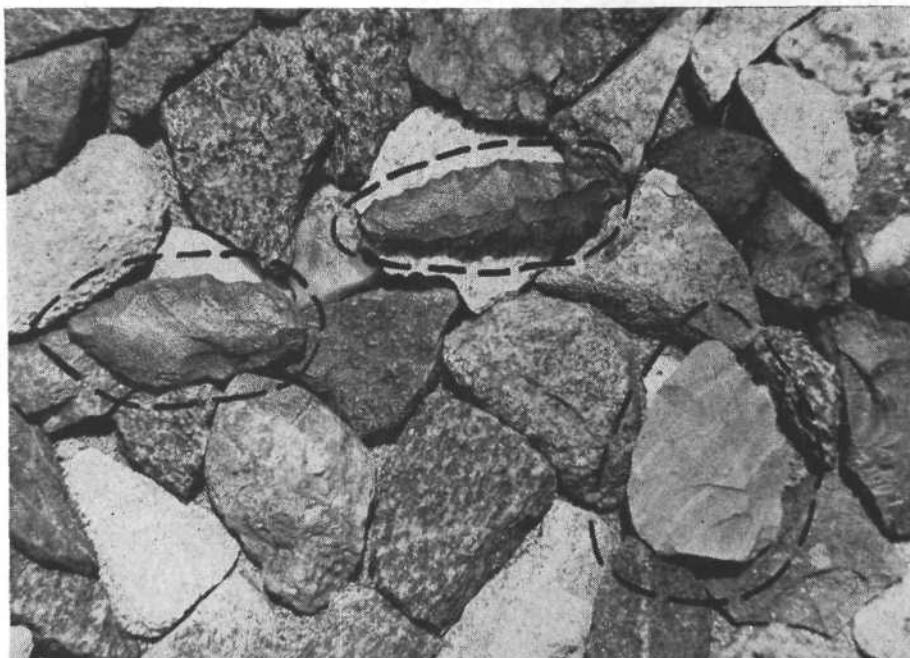
WE WENT hunting for Shoshone and Paiute artifacts — and found 10,000 year old stone age implements. It happened in March, 1948, when Neva and I made a two-day trip into the Mohave desert.

One startling find led to another. Our search led us from the headwaters of the Mohave River to the end of its meander in Death Valley. Months went by. The complete story has been over four years in the making.

Our interest in searching out old Indian campsites has led us to many dry lakes in the Southern California desert regions. But on that rainy, blustery day in March, Silver Lake just north of Baker, California, was our objective. It was a new dry lake to explore, just another of many in our plan of exploration.

On previous trips into that region we had grown accustomed to the typical Shoshone village site. Almost without exception, they were found in sand dunes near the edge of a dry lake. But at Silver Lake that pattern was different.

From the very start, it seemed to be a dry run. We followed Highway 127 north from Baker along the east



Three projectile points found on the north shore of Silver Lake playa. The variegated desert paving on which these artifacts lie makes it difficult to find them.

shore watching for sand dunes. No previous dry lake had appeared so bleak, so completely devoid of sites. An old section of the Tonopah & Tidewater Railroad formerly ran across the playa (dry lake bed), but later was realigned to the east. The rails and many of the ties have been taken up, marking the end of a romantic tale of gold and silver and tide of empire. An emergency landing field now occupies a part of the playa. A weather station is on the east shore near the north end and a large sub-station of the Hoover Dam system is just to the northeast.

We scanned the west shore through the field glasses. The north end of Silver Lake is marked by a rise in ground level and several limestone hills. Three sets of transmission lines are borne lightly aloft by tall steel skeletons which stalk imposingly across the northern tip of the playa. At the power line we turned westward to secure a closer look at the far shore.

About half way across the dry lake bed we stopped the car for a sandwich. While discussing the possibility of swinging northward toward Death Valley to another dry lake, we saw what appeared to be a wave-cut hill. We had just driven past it without interest, but here was a different perspective.

Perhaps it was just an unusual form of erosion. We discussed it while finishing our lunch. From the uniformly level base line which the hill presented, it must have been the result of wave action. Yet it seemed unlikely that water had ever filled this basin to the wave-cut base line, considerably above the playa level!

A cold mist was falling as I climbed the hill. From that vantage point, what appeared to be a beach took the form

of a gradual arc across the north end of Silver Lake but far removed from it. I scaled the highest point and confirmed that first impression. For, swinging in a gentle curve to the west was an unmistakable strand line, which seemed to coincide in level with the wave-cut base of the hill which had first excited our curiosity.

Now here was something to whet the hunting instinct for artifacts. The drizzle had stopped and upon my return to the car, we decided to examine the beach areas.

We checked our altitude. The playa registered 900 plus feet. We headed for the beach area. From here, it appeared to be a man-made embankment. Some soft sand held us up awhile but we made it through to the top of the embankment. There the altimeter registered 940 feet. The beach surface was desert mosaic, such as is often found near limestone outcrops. The principal vegetation was the creosote bush. Mohave cactus (*Echinocactus polycephalus*) grew on the hills.

It took time to adjust our eyes for searching out stone-age implements

Ground Sloth. One of the most recent of the prehistoric animals known to have lived in the Mohave desert country. These clumsy creatures walked on the outer edge of their feet and knuckles and moved about with a shuffling gait. They were vegetarians.





Sabre-toothed cat. These powerful animals with blade-like tusks that sometimes reached a length of six inches, are believed to have prowled around the waterholes waiting in ambush for the herbivorous mammals which came there to drink.

which might be interspersed with the millions of odd sized rocks and pebbles laid down in a hard-packed pavement as if by human hand. Frankly, it was a discouraging first sight. But before too long, Neva found some flint chips and then a broken knife blade! It takes but one such find to stimulate one's interest. We covered this vast camp area as best we could that first day and were well rewarded.

Visits to the library and the district water offices disclosed that surveys had been conducted in this general area. Railroad, highway and power-line surveyors and geologists had come and gone. An exhaustive search of old records, published papers and books was made in an effort to substantiate further our own theory of a large lake about whose shores lived an ancient people. We found that other men shared our belief in the existence of a large lake at what is now Baker. Some of them recorded it as factual information in the form of reports. Neva and I, sometimes accompanied by our good friends, Ruth and Merle Coger, have revisited the area many times. Here now, is the story which our own survey efforts and a study of references unfolded.

Lake Mohave is the name which has been given that immense body of water which during the last pluvial periods occupied the basins of modern Soda and Silver Dry Lakes. Au-

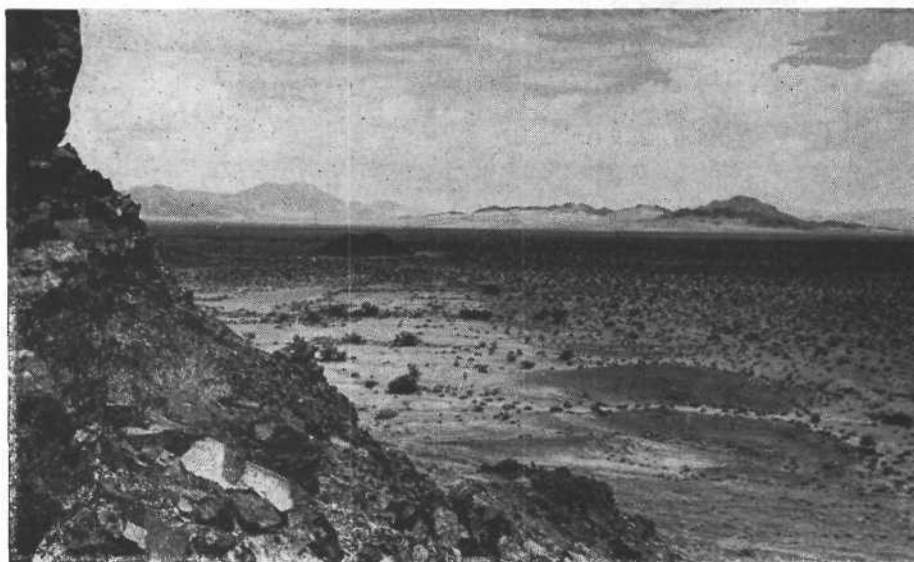
thorities state: "Lake Mohave existed over a period of time long enough to permit the over-flow from this lake to cut a channel in hard granitic rock to a depth of 11 feet. The length of time necessary for this action seems sufficiently long to warrant placing its age in the Late Pleistocene." Neva and I have observed and photographed this over-flow channel.

The lake was 40 feet deep at its northern end, about 20 feet deep at the southern end, approximately 23 miles long, three to six miles wide and

encompassed an area of some 75 to 100 square miles. The drainage area was more than 3500 square miles. The principal water contributor was the Mohave River which originated in the San Bernardino Mountains. It flowed into Lake Mohave which over-flowed into Riggs (Silurian) Valley and the lower Amargosa River into Death Valley resulting in another lake 400 feet deep. The evidence reasonably places the existence of this magnificent fresh water body at a period 8000 to 25,000 years ago.

One section of the Archeological Survey Association which visited many of the sites under the guidance of the Lawbaughs.





View from the north of the ancient Soda Lake playa. The car in the lower right corner is facing the two "fishing holes" described in this story.

Our major finds of Stone Age implements were restricted to the level of approximately 945 feet although levels down to 935 plus feet yielded some artifacts. Shorelines which were established at 946 and 937 feet mark the levels where beginning and cessation of overflow occurred. We visited ancient camp and possible fishing sites from the northern tip of Silver Dry Lake to the south end of Soda Dry Lake. These camps or villages completely ringed the ancient shore lines of Pleistocene Lake Mohave. Always at the same level of 945 feet the old camp sites were confirmed by finding flint chips and finished stone implements. We found artifacts, which in many cases exactly duplicate the European cultures classified as Mousterian, Aurignacian, Solutrean and Magdalenian. Ruth Coger found a reamer, or drill, which is almost an exact counterpart of one illustrated in Osborne's "Men of the Old Stone Age."

Those people who lived here 5000 years before the Pyramids in Egypt were built, had a wide variety of stone implements. Many people today consider the marrow inside a bone as a delicacy. And so it was with these early people. In splitting the bones of the horse, the sloth and the camel, they used massive stone cleavers. One such cleaver we found measured a full 12 inches in length!

Their weapons were the atlatl and the spear. The atlatl was a flat, slender, flexible piece of hard wood, the purpose of which was to act as a lever to extend the arm during the cast. With this device, ancient men could launch a weapon larger than an arrow but smaller than a hand spear. They notched out a groove in one end which terminated with a small tang flush with the surface. Sharp, scraper graters

were used in this operation and to cup the end of the shaft to receive the tang of the atlatl.

Straight willow shafts were used with the atlatl and as hand spears. Those early hunters very ingeniously used notched stones or spoke-shaves to loosen the bark and to scrape the shafts smooth. With these weapons they hunted camels, horses, deer, peccaries, sloths and saber-toothed cats. Stone knives were used to skin the game and to cut up the meat. Those skins which were used for clothing, footwear and sleeping robes they scraped free of fatty tissue with stone scrapers. Some of the scrapers were flat, others keeled, but both types required great skill to keep the line of flaking straight. A workman in a slaughter house was once given one of these scrapers to use. The tool was rather scornfully received, but upon trial the stone scraper was found to be admirably adapted to the task.

Stone awls or perforators were used to pierce hides for lashings of sinew. In this way stone age men tailored skins to fit their bodies. They cut their hair, a lock at a time, with the aid of two stones; one a chopping block, the other a small, dainty chopper. They wore beautiful stone crescents, slung with sinew around the neck and resting on the chest. Some of these barbaric ornaments were of obsidian, others were made from red and yellow jasper.

Ruth and Neva established a very interesting site. Here in contrast to other areas, was one upon which no flint chips were found. Yet knives and scrapers, broken and whole, were found in abundance. It manifestly was not a spot where stone implements were fashioned. The site was in the

lee of a large hill and must have been a favorite "fishing hole."

All of the major sites around Lake Mohave were given a thorough search when Neva, Ruth and I led the Archeological Survey Association over the area. Approximately 60 members including faculty personnel of the University of Southern California and staff members of the Southwest Museum, Los Angeles, made up the group. We worked for two days and found many interesting implements. Some of the party whose vacations coincided with this very successful field trip stayed on for a week.

If we accept the geologic and archeologic facts as observed, it would be entirely reasonable to assume that a people lived here in large numbers at about the same time as did Cro-Magnon man in Europe. The implements show decided parallels. It is quite true that all the artifacts in the illustrations were surface finds, yet they were associated with one constant level; the shore line of an ancient lake.

During the 1951 meeting of the Southwestern Anthropological Association at the University of Southern California, this important lake site was discussed. Dr. Ernst Antevs of Globe, Arizona, placed the age of the stone implements left by man along the shores of Lake Mohave at 8000 to 9000 years. He used the measurement of radioactive carbon with a Geiger counter in his analysis. This information was supplemented by a knowledge of the geology and climate of that period.

After the first important discoveries at old Lake Mohave we began to work upstream. During the 1949 season we explored the headwaters of the Mohave River. Between Hesperia and the San Bernardino Mountains the river is a broad dry wash which narrows down at the foothills. Its headwaters are the streams and creeks below lakes Arrowhead and Gregory. Here is the source of the famed upside-down river.

In the spring, this country is a fairly land of desert beauty. Wildflowers, even in the dry years, are present. Graceful, slender yuccas fill the valleys and top the mesas. Nearer the mountains, Spanish Bayonet predominates. A little higher up wild lilac grows profusely.

Over the centuries, the river has worked slowly, through meanders and undercutting, to develop a broad, deep valley. High up, on the second visible terrace, we found ancient stone implements. The best site found was approximately one-half mile from the present dry wash and 90 feet above it. One particularly fine hide scraper was found.

At several places above Victorville

we found recent camp sites which showed typical Shoshonean influence. The sand dunes in many places yielded grinding stones, fire places with black charcoal dust and stone implements. These old village sites are quite recent and do not reflect the antiquity of those found on the second terrace.

By March we had worked down to the Narrows at Victorville and found that they had long been a haunt of man. They are spanned today by a graceful bridge of steel and concrete. The towering granite walls of the Narrows bore petroglyphs, the pecked-in stone inscriptions left by ancient man. On both banks of the river here the Indians lived in a beautiful oasis. At this place, during recorded history, there has always been water flowing on the surface. In some sectors, as here, the Mohave runs freely on the surface in river proportions all the year through.

It was near here that Jack Davy found the foot bone of a Pleistocene camel. Neva and I have found similar bones in Pinto Basin on ancient camp sites. In direct association with them we have found large cleaver type stone choppers.

Between Oro Grande and Helen-dale, the river has been cutting away the edge of a mesa. The exposed cliffs are about 100 feet high and are fossil bearing formations. We found a similar ground formation exposed north of Barstow. On the paved road to Camp Irwin, a sign conveniently marks the turn-off to this fossil area.

Neva and I drove out to camp Irwin in February of 1950. Just a few miles north of the fossil area, the road traversed a sloping bajada which ended on the shores of Coyote Dry Lake. We found that only a shallow divide separates this dry lake from the basin which once was Manix Lake. A deep dry outlet wash meanders from the southwest corner of Coyote Lake towards the old Manix basin. Coyote Lake during late Pleistocene days was partially maintained by its own huge drainage area. During flood seasons, the low divide was inundated, making a connection between Manix and Coyote Lakes.

Many pleasant days were spent in exploring at Coyote Lake. Village site adjoined village site, almost completely ringing the shores of the old lake. They yielded implements which varied from Mohave and Pinto types to recent Shoshonean. The older pieces resembled the pieces we had found at Lake Mohave and at all the other sites along the river, right into Death Valley.

East of Barstow, the Mohave made wide meanders before flowing into Manix Lake. Some of the old river



A cross section of the projectile points found around the old shore lines of the playas on the Mohave desert.

banks are now removed several miles from the present dry river bed. Not too far from Newberry we found a very extensive river bank site! It was similar in conformation to the sites along the new dry river bed in Pinto Basin ninety-five miles to the southeast. Here again, the age-worn stone implements were the same as we had found two years before at Lake Mohave.

Manix Lake was a fluctuating body of water formed by the outward advancement of the Mohave River from the San Bernardino Mountains. Study shows that three lakes existed at separate times and at different levels. The first was formed prior to the Tioga age, and the second during that age. The third lake was caused by a temporary obstruction in Afton Gorge. Fossil remains of mammals, birds, molluscs and fish were found in these old lake beds. The Las Vegas highway traverses the green clays of the last formed lake. Farther east the highway climbs and crosses one of the bars formed by the first lake, which was about nine miles long, $3\frac{1}{2}$ wide and over 200 feet deep.

In 1951 we discovered more evidence of stone age man north of Lake Mohave, where the Amargosa joins the Mohave. In Death Valley, many stone implements were found at definite water levels. Here too, is the 40 foot long desert water hole which contains Ice Age Fish. Strange survivors of an age 11,000 years removed are present in its waters. The area is now protected as a part of Death Valley National Monument.

In all, the Mohave River drainage

area was a populous place in late Pleistocene days. It supported a tremendous population as is evidenced by the number of sites found along the river banks and on the lake shores. The correlation of implements found on these sites indicates they were all fashioned in the same style and at approximately the same time. If the railroad towns are not included, the population along the river is far less today than it was in those early days.

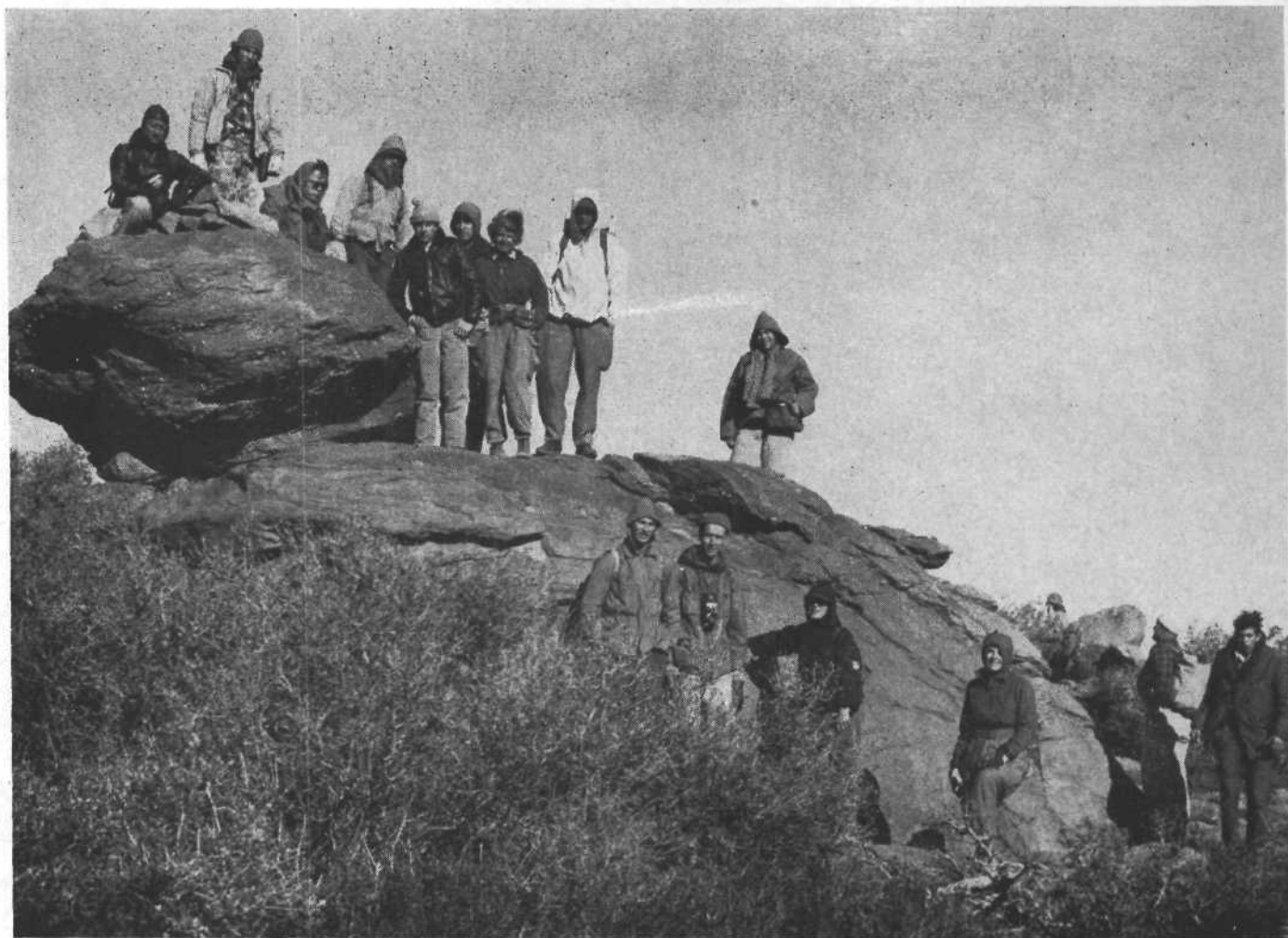
Through the centuries, the climate has slowly changed. Dry years became more and more frequent. Wild life was reduced by these changes as well as through the survival struggle. Some of the tribes moved on in search of better country and in pursuit of game. Those who remained were the Shoshone, the Paiute, the Chemehuevi and others as the white man found them during the early exploration of California.

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FRAGRANT DESERT FLOWER BLOOMS ONLY AT NIGHT

One of the most beautiful of desert flowers is the waxy white blossom of *Reina de la Noche*—the night blooming cereus.

The pointed-petaled flower—colorless except for a slight tint of creamy white in the center—lasts only one night. As the first heat of the morning sun touches it, the fragrant aroma disappears, and the blossom dies. Since pollination must be done in the short time the bloom is open, nature endowed the cereus with a white flower and a pervading odor to attract insects at night—*Arizona Republic*.



Sierra Club members at the summit of Rabbit Peak, in Southern California's Santa Rosa Mountains. Assistant Leader John Delmonte, in parka and muffler, stands alone on rock in center of picture.

We Climbed Rabbit Peak

A slow, steady pace with frequent short rests—that is Bill Henderson's formula for the strenuous climb to Rabbit Peak, in the Santa Rosa Mountains above Southern California's Borrego Desert. With Bill as their leader, 23 Sierra Club members reached the peak's windy summit one cold weekend last December. Louise Werner writes of the fun and thrills of a Sierra Club hike and gives *Desert Magazine* readers helpful suggestions for planning their own desert mountain recreation.

By LOUISE T. WERNER
Photographs by the Author

OUR CARAVAN—an army weapons carrier and four town cars—stopped one chilly Saturday morning last December on the Borrego Desert near the eastern tip of Southern California's Santa Rosa Mountains.

This was Pegleg Smith country—the region where the fabled three hills topped with nuggets of black gold are said to be located.

But we had not come to search for Pegleg's gold. We planned to explore a new route to the top of Rabbit Peak.

There were 25 in our party, members of the Desert Peaks section of the Sierra Club of California. We seek the tops of desert mountains because we find there a vast and friendly solitude. Occasionally we feel the need of such solitude as an antidote for city living.

From our cars we could see the route we would follow on the skyline to the east—a ridge beginning on the desert floor at an elevation of 1500 feet, and rising gradually to the summit 6650 feet above.

"According to the map," said Bill

Henderson, trip leader, "the distance is about 10 miles in an airline. We'll try to stay on the backbone of the ridge all the way."

We had driven about 10 miles northeast from Borrego postoffice, passing Clark's Dry Lake and continuing in a pair of sandy ruts that climbed the bajada toward the base of the Santa Rosa Range.

Near our parking place Bill Henderson, a graduate student at U.C.L.A. and Assistant Leader John Delmonte, a plastics manufacturer of Glendale, California, found the neck of a broken olla and some pottery sherds. This was once the range of desert Indians.

We weighed our packs with a scale Bill carries in his weapons carrier. Weights ranged from 25 to 57 pounds. The heavier loads belonged to gallant husbands who had lightened the packs of their wives.

The line of backpackers strung along, past graceful ocotillo with leaves of a lovely autumn red and up the backbone of the ridge, among deerhorn, beavertail, barrel and cholla cacti and little seashells lying among the rocks. The creosote bushes were waxy green and agave lifted tall stalks all around. Two of them displayed their yellow blossoms out of season. The vegetation obviously had enjoyed the early fall rains.

The climb was gradual, and the wide-open view from the backbone of the ridge almost made us forget the weight of our packs. On the left, we overlooked Clark's Dry Lake and on the right, a deep gulley that separated us from another spur of the ridge. Ahead was interminable upness.

After four and a half hours of backpacking, including a lunch stop and several generous rest stops, we reached a little plateau. Bill said, "We might as well camp here." We had come a good three and a half miles, and had gained about 2000 feet of elevation.

We were happy to drop the packs. A minimum pack for such a trip contains sleeping bag, food for one dinner, two lunches and one breakfast, a cooking utensil, cup and spoon, sweater and parka, flashlight, matches, lip salve, dark glasses, and a gallon of water. Most of us added a nylon ground cloth. Camera fans, of course, added camera equipment. John carried first aid.

We had a scant hour of daylight left. The men built fires with the plentiful agave windfalls, while the women unpacked the food. On a desert climb, where there is little water enroute, experienced climbers carry foods with a high liquid content. Dry foods are lighter to carry, but when you must carry every drop of your water on your back, canned foods have an advantage.

The Hendersons heated hamburgers with chile beans; Jon Gardey and Dick Apel, two U. C. L. A. students, heated up a can of spaghetti and some Vienna sausages. We had a can of vegetable beef soup with a can of corned beef thrown in. A one-dish meal like this, supplemented with a can of fruit and as much tea as the water ration will allow, takes on a special flavor after being carried for several miles on one's back. The zest with which climbers savor such a meal, eaten from a tin cup, is something seldom experienced at a well-appointed table with linen, silver and fine china.

A red and gold sunset splashed the sky over Coyote Mountain as we cleared the rocks out of our bedsites. The moon came up, and little clusters

of lights twinkled in the Borrego Desert. No doubt some of the residents there saw our fires, 3500 feet above them on the ridge.

We gathered 'round a big central campfire of dry agave for fellowship, and to sing such songs as: "All day I've faced the barren waste, without a taste of water." Leader Bill announced reveille would be at 2:30 a.m. "It takes a 15-hour day to climb from here to the summit and back here again, to pick up our packs and return to the cars," he said.

It was a cold weekend on the ridge, and some of us were none too warm in a minimum sleeping bag. The wind tore at the ground cloth. Ordinarily

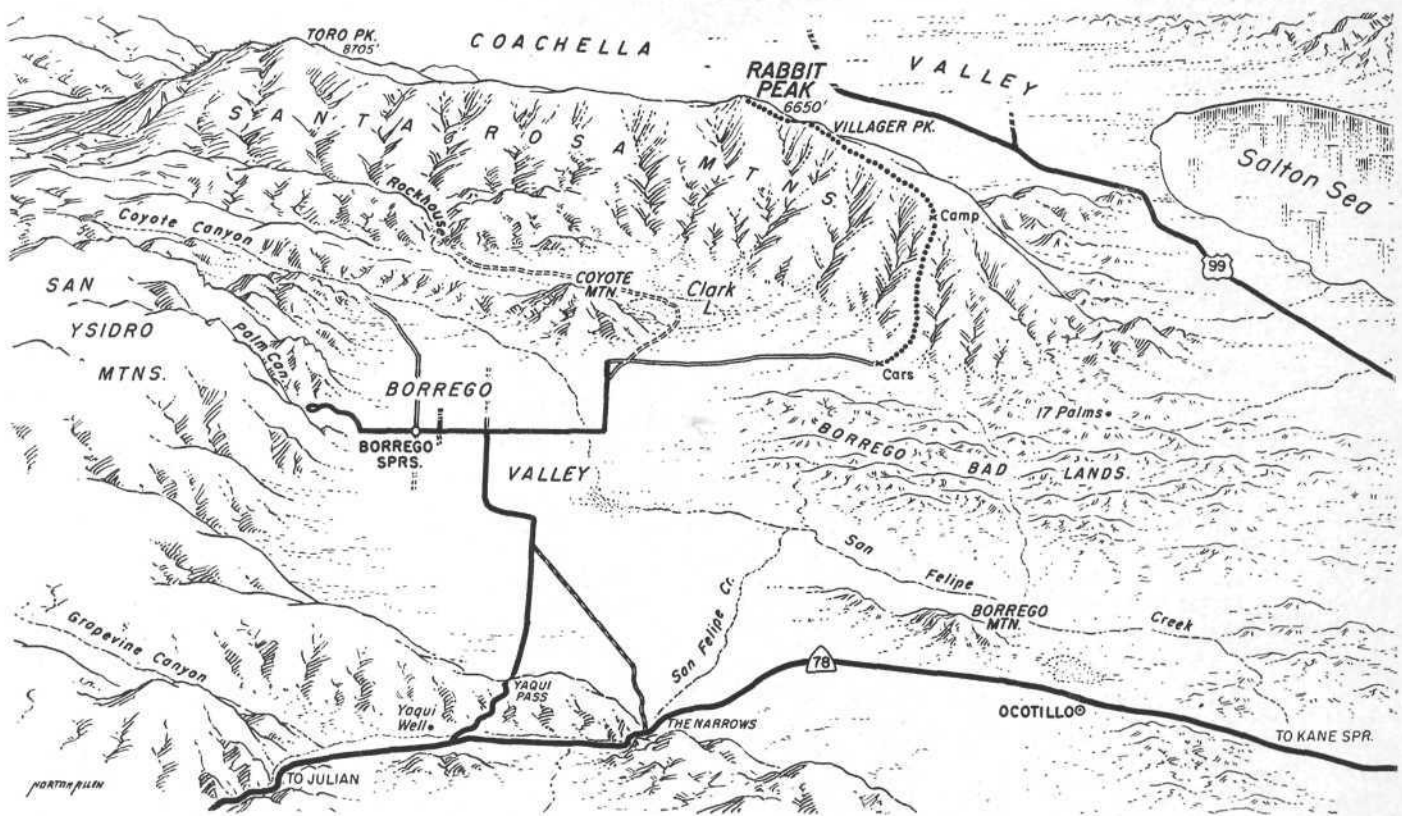
we enjoy gazing up at the unbelievably bright desert stars, for a while before going to sleep. But high on the ridge of Rabbit Peak, we pulled the ground cloth over our faces and burrowed deep in our sleeping bags.

At 2:30 a.m., Bill sounded off. The camp came to life, and somebody started the fire. At three we were gathered round the flames, muffled in all the clothes we had. Those who had considered long woolen underwear worth its weight in a pack were the most comfortable.

It felt good to be moving up toward the crest on the ridge above camp. We could see its outline in the moonlight. The wind whooshed about our parka hoods, making conversation a lost ef-

Bill Henderson, Leader of the Rabbit Peak climb, found the skeleton of a bighorn sheep. The animals are protected in the Santa Rosa game refuge.





fort. Most of us carried flashlights for emergency use, but Bill believes a hiker is better off if he cultivates his night vision; flashlights only confuse, especially if they are turned on and off, on and off. It was surprising how much we could see, once our eyes became accustomed to the dark. Luckily, the cacti had thinned out.

The higher we climbed up the ridge, the fiercer blew the wind. The sky greyed, and dark shadows of bushes and trees loomed ahead. A little later we recognized mountain mahogany, pinyon pines and juniper. A red streak appeared in the east and beneath it the dull blue of the Salton Sea. Sunrise was the signal for a breakfast stop. There we sat, looking down on the Salton Sea over 5000 feet below us, enjoying the warmth of a fire and of the sunshine and of hot coffee from a billycan. The canteens had ice, and the hard-boiled eggs we had brought from home had ice between the shells and the cooked egg whites.

We looked down on the old stamping grounds of that rugged individualist, Fig Tree John. Before the turn of the century, and before the Colorado River broke through and formed the Salton Sea, Fig Tree John, a Cahuilla Indian, lived with his family in a wattled jacal—a hut made of arrow weed and mud—at a spring near this edge of the Salton Sea. Around his spring he had a number of Black Mission Fig trees, the only fig trees in that part of the country. He roamed the Santa Rosa Mountains in search of

pinyon nuts, seeds, roots, mescal, rabbits, coyote and bighorn sheep.

Into this primitive environment came white men settling on the edge of the Salton Sea and planting date gardens. Fig Tree John put a barbed wire fence around his Spring and a row of mesquite poles along what he considered his boundary line. His tribe submitted to the white man. Not Fig Tree John. He turned against his own people.

He displayed, threateningly, an ancient 44-40 model 63 Winchester carbine. It gave him a bad reputation. Occasionally a white man missed a tool, a bucket or a piece of harness. It was easy to blame Fig Tree John. Sometimes the missing article was seen in Fig Tree's possession. To Fig Tree John that was nothing when compared to the way the white man had come into the valley and taken the land of his people.

There are a few white people alive today who knew Fig Tree well enough to see another side of him. Nina Paul Shumway and Leland Yost, in an article in the January, 1941, *Desert Magazine*, tell how Fig Tree used to visit at their ranches near Oasis. He would bring a watermelon, for instance, and present it with an air of ceremony, as if he were bringing a precious gift. After this gesture of generosity he would indicate that he would like some coffee or sugar in return. As he grew older, he would sometimes come without anything to offer and would simply ask for the sugar or coffee. He usually got it. His favorite dainties were corned beef and canned peaches.

Fig Tree John had a faded blue army uniform, a tall silk top hat and a cane, and he always donned this outfit on festive occasions. No one knew how he obtained it, but it made him a character, a role he seemed to enjoy.

Fig Tree John is said to have once saved the life of a youth who had lost his burros, and came crawling, half dead, to his spring. He nursed the lad for a week and then took him to Mecca on horseback. Eventually, the 44-40 model 63 Winchester carbine was found to be unloaded and minus certain essential shooting parts.

Undoubtedly the difference between Fig Tree John and his Cahuilla brothers who bowed to the inevitable, was a rock-bottom individualism that would not let him conform to pattern. It made enemies. It made him lonely. But nobody remembers the names of the docile Cahuillas, while Fig Tree John has become a legend. He died in 1927 at the purported age of 135 years.

The Fig Tree John story intersects the Pegleg Smith saga at one point. After the death of the original Pegleg, a San Jose rancher, said to be a personal friend of the one-legged miner, made camp one day at Seventeen Palms. This is within 15 miles of Fig Tree's spring. The rancher brought with him a 16-year-old boy. On the second morning, he left the camp in charge of the boy, saying he would be back in about four hours. Three days later he had not returned, so the boy reported him missing. San Diego

posses searched the area, but no trace of the San Jose rancher was ever found. It was rumored, that Fig Tree John had the job of guarding an Indian mine in the vicinity, and that he had bragged of doing away with prospectors who came near it.

Cheered and refreshed by the warm food, the rest and the sunshine, we continued up the ridge. It had gone up consistently to about the 5500-foot elevation. Then it had dipped a few times, causing us to lose about 400 feet of elevation. Ahead, the ridge dipped once more and then headed, with a long slope, directly for the summit. Now that it was light, the advantages of ridge-walking again became apparent, as compared to climbing up washes and gulleys, and contouring up slopes. The view was open in all directions. To our left the terrain dropped off raggedly for over 5000 feet into Clark's Dry Lake.

The top of Rabbit Peak is a boulder-strewn plateau. Beyond it, the ridge dipped and rose for another ten airline miles or so to snow-covered Toro Peak. In the distance, the snowy summits of San Jacinto and San Geronio hung mistily in the sky.

When Bill first scouted Rabbit Peak in 1947, he found a cairn on the summit containing the names of other hikers who had preceded him. In the cairn was a Linotype slug carrying the name of Randall Henderson, who climbed the peak February 19-20, 1938, on the north side with John Hilton, Wilson McKenney, Jimmy Lyons, John Vever and Lloyd Hall. Bill moved the cairn from its boulder pile high on the peak to the one rock he considered loftier still.

The Sierra Club made its first scheduled ascent of Rabbit Peak in February, 1948. Twenty-five members signed the register which was placed in the cairn with the record of the Henderson party. James and Harriet Bonner and Clem Todd climbed up the north ridge in 1947, but they left no record. We also neglected to sign our names. It was so cold on the summit, we thought only of getting down and out of the wind.

Bill had 23 people on the top of Rabbit Peak by 9:00 a.m. He has a reputation for getting large parties up difficult peaks in good shape. An early start and a slow, steady pace with frequent short rests does it. People new to climbing surprise themselves when under Bill's leadership. They find that they have pushed out what they considered their limits.

On the way down we picked out a sheltered spot among the pinyons, junipers, rocks and sunshine and ate our lunch. We relished most, at this point, celery, carrots, apples, oranges



Above—A typical Sierra Club pack for the two-day hike to Rabbit Peak. Minimum pack contains sleeping bag; food for one dinner, two lunches and one breakfast; cooking utensils; cup and spoon; sweater and parka; flashlight; matches; lip salve; dark glasses and a gallon of water.

Below—The Sierrans wore warm clothing against the chill and biting winds of December. In single file, they followed the Mountain ridge at a slow, steady pace, and reached the 6650-foot summit by 9 a.m. Sunday morning.

and canned fruits. Some who had brought sandwiches found they had no appetite for them. A few were out of water. Some had water to share. To be able, in such a circumstance, to offer a drink of water to a companion who is out makes one feels more opulent than inviting him to dine at the best hotel in town.

On the descent Bill Henderson found the skeleton of a bighorn sheep. It had not yet bleached sufficiently to

remove the odor of decay. Barbara Lilley, who was climbing Rabbit Peak for the third time, said she had seen live bighorns on the two previous trips.

We reached base camp at 3 p.m. We repacked our knapsacks, and headed back to the cars. The leaders, who stayed behind to see that the campsite was left clean, saw a live bighorn above camp, just as they were about to leave. It was 6 p.m. before the last of us reached the cars.



Family of Coati-mundis in their native habitat.

Recent Emigrants From Mexico . . .

By H. JACKSON CARY
Photograph by H. L. Chaffee

SOMETIMES DESCRIBED as a "cross between a monkey and a raccoon," the Coati-mundi recently has migrated to the three southernmost counties in Arizona from Mexico. It has a ringed tail and body similar to the raccoon and the snout and tusks of a pig.

Another peculiar characteristic of the Coati is its walk when it is on the ground. It can be described as the same lumbering gait as the bear, although it is much more agile than this larger animal. A brown heavily furred mammal weighing about 30 pounds when full grown, Coati-mundi is equally at home in the trees and on the ground. The tail is not prehensile as is that of the monkey family, although to the spectator it seems they would have to use their tails to attain the agility and the speed with which they fly through the trees.

The Coati-mundi or the Chula, as it is called in Mexico, is a gregarious carnivorous animal that travels in groups. While feeding, one is on guard to sound the alarm if an enemy should appear. The watchman can always be identified by the upright position of its tail. The others hold their tails more or less parallel to the ground.

They use their long flexible snouts to root in the earth like a pig, subsisting mainly on insects and lizards. When

they feed in the trees their diet consists mainly of birds' eggs and any small birds. If they continue to multiply in the United States they will be regarded as predatory animals because of their destruction of bird life.

The Chula is a friendly little animal and is easily domesticated. In Mexico and South America they are tamed and given the run of the house like any other pet. They are intelligent and clean and very curious. They will get into anything that smells or looks like food. One owner of a Coati-mundi had strung a wire between two trees. In the center of the wire he had tied a glass container filled with sugar water for the purpose of feeding the hummingbirds. The Coati smelled the sugar water and climbed out on the wire. The container had too small an opening for his tongue, so he hung precariously by three paws using the fourth to tilt the jar to his lips in the same manner as a human drinking water from a glass.

Chulas are basically arboreal, living only in forested areas. They have litters several times a year numbering from three to five in each. Their natural habitat is a cave, although they can easily sleep in trees or on the ground. Their two sharp tusks and their agility make them ferocious opponents when attacked, and with these defensive weapons it is expected their tribe will increase in the border area of Arizona. The picture was taken at 1/400th of a second. A slower speed would have shown the animals only as a blur.

Life on the Desert

By PAUL WILHELM
Thousand Palms, California

GRIZZLED OLD Johann Samuelson, hardrock miner, once operated a gold mine high in the piney peaks of the Little San Bernardinos of Southern California.

Slim pockets and thin veins in two tunnels barely gave Johann enough gold to eke out a precarious living. The tunnels, located dangerously one above the other, ran straight into the mountain. Each of them was about two hundred feet long.

If Johann didn't daily climb the steep catwalk up the sheer cliff wall and dig resolutely into loose quartz which lined the tunnel's partly-timbered walls, his would have been a poor lot indeed. As it was, he barely made enough to buy salt pork, bacon and lima beans; even then, neighbors were often obliged to come to his aid.

Then a series of illnesses made old Johann an impatient convalescent at my ranch for weeks at a time. Not that he wasn't hard as the rocks on his gold claim ridges. But he'd complain, "Like the Mexican I eat too much grease; it's bad for the liver and kidneys, but I like it."

The truth was, Johann, a stubborn old Swede, had become afraid of the distance from help in case of a sudden attack. But despite his growing fears he wouldn't leave Hidden Gold Mine. You couldn't blame him. After ten years of drifting through a schist formation with a foot wall of diorite granite he had plumbed what he believed to be the mother lode. In the contact it was bluish quartz, less than fifteen feet wide in places—and rich in pockets that assayed, at the Garfield smelter in Utah, as high as \$51.00 a ton.

"Bonanza it'll be!" old Johann would holler from his bed at my ranch. "It's in sight! I gotta keep digging!"

I was as excited as the old hardrocker. Hadn't I seen the report of the assay from the Utah smelter?

Against future attacks of illness we contrived a system of smoke signals between my ranch and his diggings. Each evening at six I would scan the northeast horizon. Smoke trailing above distant blue peaks was my cue. The signals worked. Once I believe they saved his life when I rushed up there and took him to the Indio hospital. After that, his fear of isolation in those silent canyons became an obsession; but he wouldn't give up—not old Johann.

Then one November evening when I saw clouds of smoke billowing above Bighorn Peak I knew Johann's plight was urgent. Hurriedly I loaded my aged Studebaker with vegetable greens, jars of fresh water and my medicine kit and after an hour's drive up Twelve Mile Wash arrived at his diggings.

It was the old complaints: jumpy kidneys, a sick stomach, lack of breath and heart palpitation. "I'll get you to the doctor in less than an hour," I told him.

He sat up in bed. A lighted candle on a table cast a dim glow into the corners of his shack. "No doctor today!" he snorted. But his mouth was twisted in pain. In little gasps he said, "Just as I set off the last stick of dynamite—in a rich-looking pocket—I felt the pain grab me in the middle of the back. But I stayed 'til the dynamite fumes were gone. When I went back into the tunnel—it was like I suspected—rich! A rich pocket!

Old Johann struck pay ore—but the bonanza he found eventually was in saving a friend's life. This story was one of the entries in Desert's Life-on-the-Desert contest in 1951.



Paul Wilhelm (left) and Johann Samuelson — at 1000 Palms oasis in October, 1939. Photo was taken just a month before the cave-in described in this story.

Richer'n all the others!" He drew a deep breath. "I've got to open that pocket!" he shouted. "I need more dynamite! I've a hunch this is it!"

The exhausted old hardrocker lay back in bed. I arose from the nail keg, went to the sideboard and began stirring up a salad of tomatoes and lettuce. "It's no use talking now and tiring yourself out," I cautioned. "Eat this salad, take the medicine and get some sleep; we'll talk about it in the morning." When I left him with the salad and medicine he was an excited old miner.

Sun-up, Johann woke me where I had rolled out my sleeping bag on the ground below his shack. "Get up," he roared, "and come on in for coffee!" I squinted up at him. There was his old familiar smile. The medicine had worked. He was as well as the toughest Bighorn
(Continued on next page)

that roamed his ridges. "Dynamite! Fuse! It's me for the hardware store at Banning! Once through that bluish quartz —" he snapped his fingers — "bonanza!"

As I crawled out of my sleeping bag Johann admitted he hadn't slept a wink—kept seeing pockets full of glittering nuggets.

"Up at the diggings," he warned me, "you drill a hole for a second charge—but watch for falling rocks. That last blast liked to loosened up that crumbly ceiling—all shale, and decomposed quartz—you gotta watch it."

When the excited old mountain man had left for the settlement in his 1924 Dodge pickup, I ate breakfast, walked up canyon, snaked my way along the catwalk and entered the cool darkness of the lower tunnel. With a candle for a light, I began drilling into crumbling quartz at the tunnel heading. In an hour I had a neat hole almost completed.

After a short rest I made ready to tackle the hole with the steel drill and the doublejack when, from somewhere high above me came a sharp, grating sound—then the ominous clatter of a falling rock reverberated through the silent tunnel. I held the drill in my sweaty hand and looked around apprehensively. A faint glow of light came from the distant tunnel entrance.

On sudden impulse I wanted to make a bolt for that light. My next reaction was to stay where I was.

The sound of grating rock on rock increased to a roar. Shocks like earth tremors rocked me on my feet. Toward the tunnel entrance I saw the beginning of the cave-in.

Then the whole mountain seemed to come tumbling in. Rocks and splintered timber spewed from the upper tunnel. Clouds of dust rushed like a solid wall toward me. The candle sputtered, went out. I was left in pitch darkness, too paralyzed to realize that I was hermetically sealed in that cliff of quartz.

Acrid-smelling dust thickened; I tried to light a match. The flame flickered, snuffed out. Slowly the seriousness of my predicament dawned.

There on the tunnel floor, half smothered, I fought for my life, trying to think clearly. As I lapsed into unconsciousness I was vaguely aware of the rhythmic click of pick on rock somewhere in the distance.

A few minutes later Johann had holed through the debris and a little fresh air soon revived me. Johann told me what had happened. Half way to Banning he felt compelled as though by a physical force to turn back to the mine. As he approached the tunnel he looked up and saw dust boiling out of the entrance. He raced

with pick and shovel up the catwalk, knowing I was in there somewhere.

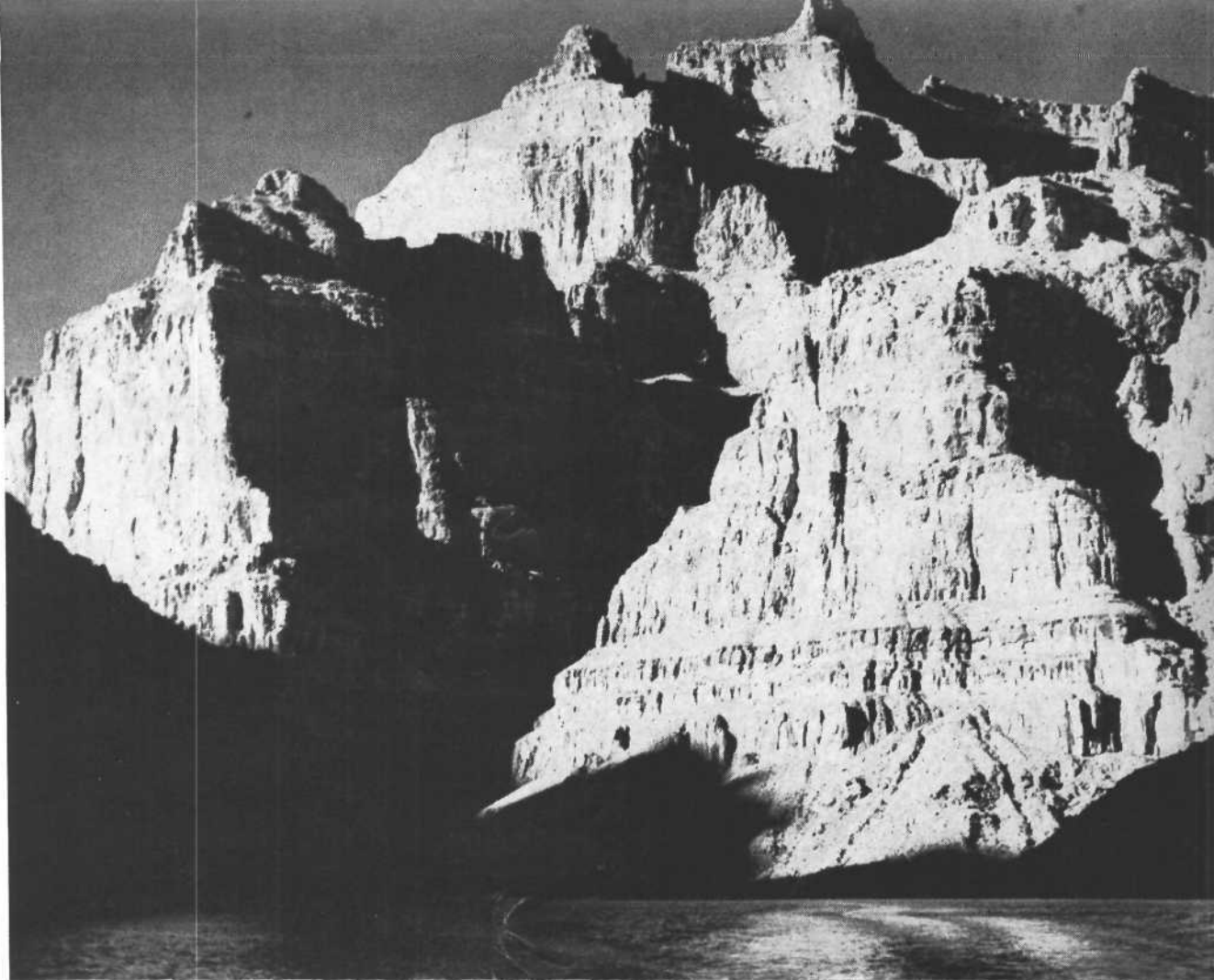
Unfortunately, Johann Samuelson never did find bonanza. But like the

big-hearted old hardrocker that he was he told me, "It's bonanza enough that I obeyed that warning and turned back to the diggings."

Desert Quiz

The desert is a big world—and a very interesting world to those who rise above their own personal problems and seek to know what goes on about them. Books and travel are the doorways through which one becomes acquainted with this desert world—and this Quiz is offered each month as a test of the progress *Desert Magazine* readers are making in learning about this fascinating desert world. Twelve to 14 correct answers is fair, 15 to 17 is good, 18 or better is equal to Grade A in the school class room. The answers are on page 26.

- 1—The horned toad's best natural defense is its — Sharp teeth _____. Coloration _____. Speed _____. Needle-like horns _____.
- 2—If you were living on the desert and your soap supply ran out you would find a very effective substitute in—The leaves of the creosote bush _____. The roots of certain species of yucca _____. The juice of the barrel cactus _____. The pods of the Palo Verde tree _____.
- 3—Fortification Hill is visible from — Roosevelt dam _____. Elephant Butte dam _____. Coolidge dam _____. Hoover dam _____.
- 4—The beds in a Navajo hogan generally are of—Pine needles _____. Navajo rugs on the floor _____. Sheepskins on the floor _____. Rough hewn logs _____.
- 5—Azurite is a mineral of—Iron _____. Zinc _____. Copper _____. Tin _____.
- 6—Adolf Bandelier, author of *The Delight Makers*, was an—Archeologist _____. A Mountain Man _____. A stage coach driver _____. An Apache guide _____.
- 7—Jacob's Lake is in — Utah _____. Arizona _____. New Mexico _____. Nevada _____.
- 8—A wickiup is a—Type of Indian basket _____. A primitive dwelling _____. Weapon used by prehistoric Indians _____. Crude net for catching fish _____.
- 9—If you had been in Yuma, Arizona in late 1775 and a cavalcade of horsemen of Spanish descent passed that way, their leader would have been—General Kearny _____. Father Kino _____. Juan Bautista de Anza _____. Coronado _____.
- 10—If the guide told you the great rock massif on the horizon was the Great White Throne, you would know you were in—Grand Canyon National park _____. Joshua Tree National monument _____. Zion National park _____. Chiricahua National monument _____.
- 11—The Havasupai Indian reservation is in—Arizona _____. Utah _____. Colorado _____. California _____.
- 12—Stove Pipe Well hotel is in—Cedar City, Utah _____. Death Valley _____. Barstow, California _____. Salt River Valley, Arizona _____.
- 13—The Kaibab forest is on the—North Rim of Grand Canyon _____. The White Mountains of Arizona _____. The Panamint Mountains overlooking Death Valley _____. Charleston Mountains in Nevada _____.
- 14—One of the following towns is not a Hopi Indian village—Oraibi _____. Moenkopi _____. Shungopovi _____. Kayenta _____.
- 15—The mines at Globe, Arizona, produce mostly—Gold _____. Iron _____. Copper _____. Lead _____.
- 16—*Riders of the Purple Sage* was written by—Harold Bell Wright _____. Zane Grey _____. Edwin Corle _____. J. B. Priestley _____.
- 17—Chimayo weaving is done mostly by—Navajo Indians _____. Americans of Mexican descent _____. Hopi Indians _____. Yuma Indians _____.
- 18—The Crossing of the Fathers on the Colorado was made by a party of missionaries of whom the best known member is — Father Font _____. Father Garces _____. Marcos de Niza _____. Father Escalante _____.
- 19—Harry Goulding is a — Senator from New Mexico _____. Indian Trader in Monument Valley _____. Author of well known western books _____. Cowboy artist _____.
- 20—The Museum of Northern Arizona is in — Prescott _____. Holbrook _____. Grand Canyon National Park _____. Flagstaff _____.



Pictures of The Month

Canyon Shadows . . .

Just before sunset, Weldon F. Heald of Portal, Arizona, photographed the mile-high walls of the Grand Canyon at Lake Mead. The resulting composition, with its dramatic lights and shadows, was awarded first prize in Desert Magazine's photo contest. It was taken with an FECA camera, Schneider lens, Wratten A filter, Super XX film at 1/100 second, f. 4.5.

Indian Craftsman . . .

This Taos Indian refused to pose for Vincent J. Mandese of Santa Barbara, California, but for 50 cents he permitted the photographer to shoot while he was working. Mandese used a Kodak Reflex II camera, Plus X film, 1/100 second at f. 11 for this study, second prize winner in the July contest.



Mines and Mining

Park City, Utah . . .

An experiment conducted jointly during the past 18 months by three mining companies in the Park City area, exploring possible new ore bodies, will be continued, Paul H. Hunt, vice-president of Park Utah Mining Company, has announced. The companies—Park Utah, Silver King Coalition Mines Company and Daly Mining Company—reported \$550,000 worth of ore had been recovered under the joint exploration project. The eastern third of the area has been worked, and all indications point to the western two-thirds being more productive in lead and zinc ores, Hunt said.—*Moab Times-Independent*.

Winnemucca, Nevada . . .

Opening of the Gold Prince claim at Seven Troughs is being planned by the Wood River Minerals Company, according to Earl Tucker, superintendent. The ground is part of that purchased by the company from the old Nevada State Gold Mines Company. The location is about a mile southwest of the old tunnel portal. Tucker and his associates believe the formation here is the apex of the 5100-foot vein cut by the big tunnel when it was driven in 1930. When access roads are completed, a compressor, drills and other equipment will be moved in and the tunnel started.—*Humboldt Star*.

Lovelock, Nevada . . .

Shipments of iron ore from the area 18 miles southeast of Lovelock have reached a daily total of 50 cars. At least half a dozen producers are operating in the area. Leading shippers are Dodge Construction Company and Mineral Materials Company, each moving about 20 cars a day. The fact that the properties are widely separated indicates a large future supply. The ore is a mixture of hematite and magnetite. Some of it runs as high as 70 percent iron.—*Humboldt Star*.

Phoenix, Arizona . . .

Arizona produced 45 percent of all copper mined in the United States last year, more than any other state. Paced by its \$200,000,000 copper production, the state's output of the five principal metals—copper, gold, silver, lead and zinc—rose to \$236,000,000 and broke a 35-year mining record.—*Graham County Guardian*.

Tonopah, Nevada . . .

Three drill cores at the Summit King Mine are beginning to show "typical Tonopah quartz" carrying values in undetermined amounts, reports an official of the Homestake Mining Company, which is interested in the venture. A fourth drill hole is now being sunk, originating from the 300 foot level. The holes are being struck off from the face of the drift and incline downward at between 45 and 55 degrees.—*Tonopah Times-Bonanza*.

Globe, Arizona . . .

Henry V. Snell, 73, pioneer mining engineer of Globe, has returned to make a survey of asbestos producers in Gila County. It was Snell who discovered and worked the Chrysotile, pioneer producer of the county's iron-free asbestos. The property recently was purchased by Western Chemical Company of Phoenix and Los Angeles. A 50-ton cruding plant has been built, and the company will ship the processed ore to Los Angeles for fiberizing.—*Arizona Republic*.

Salt Lake City, Utah . . .

Three uranium ore processing mills and two ore buying stations are now located in Utah, and more are being planned, reported the raw materials subcommittee of the joint Congressional committee on atomic energy. Two mills, owned by the commission and operated through contractors, are at Monticello, San Juan County, and Salt Lake City. A third mill, small and privately owned, is at Hite, Garfield County. This mill processes copper uranium ores. The buying stations are at Marysville, Paiute County, and Thompson, Grand County, and a third is scheduled for early operation at Greenriver, Emery County.—*Washington County News*.

Steamboat, Nevada . . .

Resumption of production and installation of a mill at an early date are planned at Union lead mine at Steamboat, Washoe County, by Imperial Lead Mines, a California firm. Imperial recently purchased the mine after instituting suit against Union Lead and Smelting Company for approximately \$200,000 in claimed debts. The Union was a substantial lead-zinc producer during World War II.—*Humboldt Star*.

Phoenix, Arizona . . .

Arizona State Tax Commission has set revaluation of mining companies in Arizona at \$195,840,892. This figure is slightly lower than last year's valuation for producing mining companies, \$196,961,739. The drop is attributed to alterations in figures for the Castle Dome Mine in Gila County and the Eagle-Pitcher Mine.—*Yuma Daily Sun*.

Tonopah, Nevada . . .

Smokey Valley district of Nye County, Nevada, is rapidly developing into an important production center for tungsten and antimony, with all indications pointing to continued growth in mining and milling activity there. Largest single operation in the area is the Round Mountain Gold Dredging Corporation, where 80 men are employed. Last Chance Mining Company is developing promising antimony properties in Wall Canyon; Newmont Mining Corporation continues to work the Bobby tungsten mine in Ophir Canyon, and the Smith brothers and Barney O'Malia are sinking a shaft on the Commodore tungsten property in Smokey Valley.—*Pioche Record*.

Moab, Utah . . .

Colvin Enterprises, presently engaged in drilling an oil test well at Crescent, have acquired a lease on a group of copper claims in Salt Valley and plan extensive mining operations there. A large volume of copper ore, also carrying values in silver, cobalt and nickel, has been located, and the operators intend to start production soon, shipping the ore from Thompson.—*Mining Record*.

Washington, D. C. . . .

The Atomic Energy Commission has authorized an independent appraisal of its uranium ore sampling procedures on the Colorado Plateau in the Four Corners region by the Colorado School of Mines Research Foundation. Complaints over the accuracy of uranium ore sampling at the commission's plants had been made by the Uranium Ore Producers Association.—*Salt Lake Tribune*.

Lovelock, Nevada . . .

Gold-tin dredging operations at Placeritos, 40 miles north of Lovelock, promises higher values than at first expected, reports V. C. Frazier, manager for Gold of Ophir Placers, Inc. Drilling has gone down to 27 feet with pay dirt found 6 to 18 feet in depth. Most of the pay gravel is in gulches.—*Mining Record*.



Lost Lead of the Santa Clara

By GEORGE GARDNER
Map by Margaret Gerke

SO FAR as I have been able to ascertain, this is the whole history of the Lost Lead silver mine. And I tell it to you just as I heard it from an old cattleman turned prospector whom I met on the river banks of the Santa Clara.

We had just finished cooking supper. I handed the old timer his plate of beans, and he settled himself more comfortably against the fallen log, stretched his legs to the warmth of the fire and began:

"Three of us, to my knowledge, have actually stood at the site of the Lost Lead. Jim Houdon was the first, and he actually got two loads of ore from the mine. Robert Lloyd had a few samples. All I have is a walking stick with a loop for a handle; a loop, that in its proper place would have identified the location of the lost mine.

"Jim Houdon, as I said, came upon it first—that would have been about 1852. He was in a wagon train passing through Utah on the old Spanish trail, headed for the gold fields of California.

Indians had been on their tail most of the way through the state, but there'd been little trouble except for the loss of a few horses and some cattle. However, as the train passed down the Santa Clara Creek the Indians crowded in closer and the captain of the train ordered a shorter, more compact line, and closer vigilance.

"The rear guard pressed closer to the last two wagons as they slowed to cross the creek, and he swung his quirt in the air to speed up the wagons. This startled the horses on the fore wagon, and they shied off the road. The hind wagon wheel bumped up over a ledge and slid down the rocks, scraping them clean, so that Jim Houdon in the last wagon saw metal gleaming where the iron tire had scraped the bottom section of the ledge. He stopped his team, paying no attention to the swearing guard, jumped to the ground, and with a stone broke some chunks from the ledge. He threw these into his wagon and started off again, looking back to fix the location in his mind.

If it hadn't been for that cloudburst, this lead mine might today be a big producer. Two different men found the rich vein, and its approximate location is well known, but the storm which brought an avalanche of rock and sand down the bed of the Santa Clara river changed the landscape so much they were never able to re-locate it.

"Along the creek bed were piles of coarse gravel and cobble stones. The vein of ore he judged to be as high as a wagon wheel—about two feet wide at the top, wider at the bottom, and sloping toward the road. This was imbedded in a ledge of rock higher than the covered wagon, and about five steps from the creek bed. To the left, perhaps half a mile from the river extended a long level ridge rising five or six hundred feet above the stream bed.

"Well, Jim went on to California with the train, this map firmly fixed in his mind, with the ore samples in his wagon. When he took the ore to the assayer's office it assayed rich in lead and silver. He didn't get back to the mine for several years, what with hunting for gold out there in California and not finding it. But he finally made a stake working for fellows who did find gold, and when the emigrants began bringing word that the Southern Utah Indians were more friendly, he outfitted a mule team with heavy bags for ore; shovel, pick, and bar for his mining, and headed back toward the Santa Clara.

"He found the mine without much trouble—the landmarks being just as he remembered them. Didn't have any trouble getting his ore back, and made a good sum on it, too, so it wasn't long until he headed back for another load. It was getting late in the spring, and this time he found the water in the creek higher. The mountain snow was melting fast, and the water had washed sand part way up the silver seam. He built a semi-circular dam of cedar boughs and sand to keep the water back, and this made a convenient place to stand while picking the ore from the ledge. The seam was wider, the metal more closely packed, and he had to dig below the level of the sand to fill his bags.

"He had his packs on the mules all ready to start back when he heard a wagon coming up the rough road. He decided to tear out the dam to let the creek bury his find, so he dragged the cedar boughs from the stream and watched the sand wash into the hole over the silver. By now he had the landmarks firmly fixed in his mind.

Then he mounted his horse and took his packtrain across the sage brush to avoid the wagon on the road.

"Now this is where Robert Lloyd comes in. He was the second to find the lead, you'll remember. He was coming along from St. George with his wife and baby. Going to Pine Valley for the summer. He came down along the river road just in time to see the miner dragging the boughs from the stream, then mount his horse and lead his packtrain off cross country. This in itself was suspicious. Why hadn't the man just followed the road? Besides pack mules weren't a frequent sight in that region. The Lloyds were curious.

"Lloyd stopped his team at the crossing. Wet boughs were lying on either side of the ledge, and a trail of damp sand led from the stream to the scrub cedars where the mules had been tied. Bits of ore still clung to the crevice, larger pieces were near the water level. He took a shovel from his wagon and reconstructed the dam, dug out the sand, and found the thick vein of ore in the bottom of the hole.

"It's a mine," he told Eliza. "Those mules were packed with ore."

"You know how women are. Eliza Lloyd said, 'We haven't any right to it. Take the dam out again, and let's go.' It was late afternoon and probably the baby was getting restless. Didn't seem to be any recent pile of stones laid that would indicate a location notice had been planted, so it seemed kind of a fine point of ethics. Anyway Lloyd did as she said. Then he hesitated and argued a minute with himself. Lone travelers weren't always safe on the Spanish trail. If the man who had left so furtively at the approach of a wagon didn't come back, Lloyd wanted to know how he could find the mine again. Felt he had sort of a second mortgage, if the first claimant didn't prove up his claim.

"He climbed up the ledge overlooking the river and the road to fix the location firmly in his mind. Stacked some fairly good sized boulders into a pile for a marker, and for good measure pulled down a good sized willow, bent it into a circle the size of his hand and pulled the top through to form a knot. While the road crossed the creek many times along this section, he felt that he had this particular crossing well in mind.

"Now either Houdon or Lloyd could have returned and found the mine if it hadn't been for the spring flood that came down the Santa Clara. Two nights after Houdon and the Lloyds left the mine there was a cloudburst in the Pine Valley Mountains. The flood tore up trees, piled high banks

of sand and gravel down the stream bed, and so changed the course of the creek that when Jim Houden returned for his third ore load he despaired of ever finding the mine, and returned to California. He had kind of a wanderlust in his blood and went on to Australia. He was out there for years.

"So, although the Lloyds didn't know it, their second mortgage to the claim was now good. The farm work and the baby took all their time that late spring and summer. Sometimes in the evening they talked of the mine. But that fall when they left Pine Valley to return to St. George for the winter months they could scarcely recognize the terrain. So changed was the river's course by the flood that they couldn't find any landmarks to tell them at which crossing the mine was buried, and they found nothing resembling the ledge of the mine itself though Lloyd said they searched all one day.

"When they got to St. George, the county seat, Lloyd had an assay made of his ore samples, and when he found how rich they were in silver and lead he searched the records at the court house, but could find no recording of a claim filed on the Santa Clara.

"He waited until the following spring and then did some intense searching for the mine; digging day after day at first one crossing and then another, but he found no trace of either his knotted willow or the stone cairn. He thought perhaps Indians had cut his willow when they were gathering willows for basket making. He knew that the rock cairn could have been washed away or buried by the flood.

"Now I ran into Robert Lloyd over at Pinto sometime along in the '70s. Didn't exactly run into him either. He stopped me on the street and asked me where I'd gotten my walking stick. I told him I'd cut it somewhere along the Santa Clara the time my horse had shied at a jack rabbit and thrown me into the creek. Got a bad wrench in my knee, and saw this good stout branch with a knot on the end to hold to, and thought it would make me a good cane to get about with. That leg always gave me trouble after that, so I kept on using the cane.

"Lloyd became real excited and asked if I could tell him the exact crossing where I'd found it.

"I said I guessed I could try if it was real important.

"So we found some shade and a couple of trees to lean against and he told me about the mine. Later he and I went out to the Santa Clara to try to find the crossing where old Nell threw me that day. In fact, we were out there hunting for it several times, but we

had no luck. Everything had changed.

"And believe it or not a few years ago I ran into Jim Houden. He was back from Australia and couldn't resist giving it one more try. We got to be good friends after we had exchanged stories."

The fire had died down to red embers, and the old man got painfully to his feet with the help of his stick with its looped handle.

"I hope somebody finds that mine, and I believe they will some day," was his parting remark.

PREHISTORIC INDIANS ONCE LIVED AT BANDELIER PARK

Nestled in canyon and mesa country of the Pajarito Plateau 45 miles north and west of Santa Fe, New Mexico, lies Bandelier National Monument, early habitat of the Pueblo Indian. The Monument was established in 1916 and was named in honor of Adolf Bandelier, Swiss-American scholar who carried on an extensive survey of ruins in the region from 1880 to 1886.

The most accessible ruins of Bandelier are in Frijoles Canyon. Tree-ring chronology and correlations of pottery types indicate most of them were inhabited in the late prehistoric period, although a few small ruins date back to the 12th century.

Like other ancient pueblo and cliff dwellers, the Frijoles inhabitants were farmers and grew corn, beans and pumpkins. Cotton cloth was found in the caves, indicating they had cotton and understood the use of the loom.

A privately owned lodge in Frijoles Canyon furnishes meals and overnight accommodations. The National Park Service maintains a large public campground, museum, custodian and three rangers who also act as guides during the tourist season.—*New Mexican*.

ANSWERS TO DESERT QUIZ

Questions are on page 22

- 1—Coloration.
- 2—The roots of certain species of yucca.
- 3—Hoover dam.
- 4—Sheepskins on the floor.
- 5—Copper.
- 6—Archeologist.
- 7—Arizona.
- 8—A primitive dwelling.
- 9—Juan Bautista de Anza.
- 10—Zion National park.
- 11—Arizona.
- 12—Death Valley.
- 13—North rim of Grand Canyon.
- 14—Kayenta.
- 15—Copper.
- 16—Zane Grey.
- 17—Americans of Mexican descent.
- 18—Father Escalante.
- 19—Indian trader in Monument Valley.
- 20—Flagstaff.

Letters

Jackrabbit Homesteaders Unite . . . Morongo Valley, California

Desert:

We noted the inquiry from John R. Warner, Redondo Beach, California, regarding jackrabbit homesteaders. (July *Desert*.) Perhaps news of our group may be of some interest to *Desert Magazine* readers.

The Palm Wells Chamber of Commerce is an incorporated organization made up of residents and five-acre lease holders in the eastern section of Morongo Valley, located in the high Joshua Tree Monument desert area on the Twentynine Palms Highway.

Beginning in 1950 with a handful of property owners and lease-holders wishing to become better acquainted and hoping to profit from exchange of ideas and information pertinent to the development of their leases, the Chamber now has a membership of 158.

Our purpose is to promote and assist in activities directed toward the general development of the entire Morongo Basin; our immediate aim is to be of assistance to the Jackrabbit homesteaders in our area.

Much has been accomplished in a brief span of time, considering the fact that our members are scattered widely about Southern California. A few are permanent residents in the valley, many others are regular weekenders.

One of our completed projects which we are finding most useful is a large map of the Palm Wells area, comprising seven sections, and showing the location and ownership of all five-acre leases as well as existing roads and utilities.

We are now working on a long range water plan whereby groups of adjoining homesteaders may cooperate in laying a water line to connect their tracts with existing water mains. We also are making available to our members, at no cost, the use of a water trailer and a concrete mixer.

Our most recent project is the institution of a building fund campaign. Ground has been donated to us and we hope before too long to have our own community building in which to hold meetings, educational and recreational activities.

Our regular meetings are held on the first Saturday evening of each month, with entertainment and a social hour following the business session. The board of directors meets every two weeks.



View of "Gopher Gulch," ghost town an Arcadia, California, father and son are building in their back yard.

The second annual Palm Wells Cactus Day will be held this year on August 30. Besides a barbecue chicken dinner, there will be both amateur and professional displays of cacti, prizes for the most unusual cactus, displays of desert arts and crafts and speakers of interest to homesteaders.

We are anticipating a wonderful get-together of jackrabbit homesteaders and cordially invite *Desert Magazine* readers to join us on Cactus Day in Palm Wells.

PALM WELLS CHAMBER OF COMMERCE

Prickly Pear Cookery . . .

Rocklin, California

Desert:

May issue of *Desert Magazine* featured a cover picture of tuna, the fruit of the prickly pear cactus.

I have 12 large prickly pears growing in my yard, and they bear an abundant crop of tuna. But most of the fruit goes to waste.

I am a newcomer to California, and know no way to use the fruit. Do you have any recipes for tuna, such as jelly or preserves?

MRS. CHARLES A. COOK

For the October, 1945, issue of *Desert Magazine*, Jerry Lauder milk wrote an article, "Mexicans Call it Tuna," in which he described how to pick and despine the fruit and gave a number of recipes for its preservation. Miel de Tuna, Melocha and Queso de Tuna are three honey-like products of different degrees of consistency. Red tuna honey is garnet-colored with a flavor something like that of honey and molasses plus a trace of pickled beets. Yellow fruit makes a deep orange product with the combined flavors of honey and butterscotch candy. Lauder milk also tells how to eat the fresh fruit and how to preserve it by drying.—R. H.

Ghost Town Hobby . . .

Arcadia, California

Desert:

I am a 14 year old boy. My father, Dr. R. C. Hyder, and I have quite an unusual hobby. We are building a ghost town in our back yard.

To date, Gopher Gulch has a general store, jail, hotel, blacksmith shop and bank. We now are putting the finishing touches on the office of our pioneer town newspaper, the *Gopher Gulch Gazette*. All of the buildings are large enough to stand in. The general store and hotel are combined in a two-story building about 16 feet high.

Our total investment in Gopher Gulch is less than \$100.

DARRELL HYDER

Pay Streak Running Thin . . .

Redondo Beach, California

Desert:

The "In Memory" feature on pages 22 and 23 of May *Desert Magazine* was a swell idea, and we feel sure all the old-timers whose headstones were pictured there would be well pleased, even the boys at Tombstone. To be remembered is one of the basic desires of the human heart.

A short time ago, on a visit to Joshua Tree National Monument, we stood beside the last resting place of an old-timer. On the sand blanket covering him were scattered 17 pennies, some of them the non-copper ones issued during the war.

We used to know many of the old boys and their sentiment regarding the base and precious metals. We can't but think this prospector of an earlier era would feel the traveling public of today, in its shining autos, is carrying a pretty narrow pay streak and running not very much to the pan.

R. N. SHUART

Bennetts Edges Badwater . . .

Los Angeles, California

Desert:

"Between You and Me" in the July issue of *Desert Magazine* reports that the closest postoffice to Panamint Springs, California, is Lone Pine, 55 miles away. However, there is a post-office at Darwin, which is very close, and at Trona, less than 55 miles away.

The Panamint Springs descriptive folder designates the address as Lone Pine, which is logical as the resort is on the mail route out of that community. That fact, however, does not make Lone Pine the closest postoffice.

In this same editorial, the elevation at Badwater is listed as 279.6. The latest survey, made quite a few years ago, is 279.8. Yes, I know that we still are using the old elevation on some of our Automobile Club maps and that the sign the club erected at Badwater reads 279.6.

Actually, Badwater is no longer the lowest spot in the United States. A recent survey discovered a place—I believe it is in the vicinity of Bennetts Well—where the elevation is 281.9 feet below sea level. This will be shown on the new Bennetts Well Quadrangle map as 282 below.

ARTHUR C. DAVIS

Automobile Club of So. Calif.

Bills Below the Border . . .

Downey, California

Desert:

On a recent visit to Baja California, I experienced difficulty in using American ten and 20 dollar bills. Store clerks, gas station operators and other businessmen were unwilling to accept bills larger than five dollars. They were adamant even to the extent of losing a sale.

This information may save many Ensenada- or Tijuana-bound travelers some embarrassment.

A. LA VIELLE LAWBAUGH

What's in a Name? . . .

Washington, Utah

Desert:

When I was a lad, the Indians in the southwestern corner of Utah were called "Shebits," not "Shivwits" as historians today designate this Paiute tribe. I first heard "Shivwits" used in 1909, when I returned to the Utah desert after a long absence. One day I rode up to the Indian farm on the Santa Clara River and met the Indian Bureau agent. He handed me his card, upon which was printed the modern word.

On this same trip I had an experience which may bear telling. Riding up a narrow canyon, I overtook a team and rack loaded with alfalfa hay. On top of the load, near the back,

loll'd an Indian. He wore shirt and overalls, a battered straw hat and clenched a stalk of alfalfa between his white teeth. I had a 3-A Kodak slung over my shoulder, and I thought he would make an interesting camera study. Urging my horse until his head nuzzled the hay, I was polishing up my best pidgin Indian, wondering if I could make myself understood, when in clear, excellent English, the Indian called down to me: "What kind of a camera do you have?" I was so sur-

prised I nearly fell off my horse! Our ensuing conversation developed the fact that he had attended Carlisle and had spent his vacations taking post card pictures of visitors to the Gettysburg battlefield.

The young man had taken the name of Foster Charles. He was the source of much information about the Paiutes, but I never did ask him about the Shivwits business. He died in St. George only last year.

RUFAS JOHNSON

Hard Rock Shorty OF DEATH VALLEY



Three dignified looking strangers stopped their car in front of the Inferno store and entered the building. The clerk was busy sorting out beans which had fallen into the sugar bin and Hard Rock Shorty was sitting in front of the store's only window reading the headlines on a 3-month-old newspaper, the latest one available in Death Valley.

"We wish to inquire about the road to a certain colossal pit commonly known as Ubehebe Crater," explained one of the visitors. "We are members of the Universal Scientific Foundation of Boston, and have been sent out to this forsaken land to make a report on the probable origin of this so-called crater. We understand it is somewhere in the region to the north of here."

"Yep, I can tell you where it is," replied the clerk. "But I think you're wastin' your time goin' up there. Mr. Hard Rock over there by the window can tell you all you want to know about that big hole in the ground. A lot of these scientific fellers have been in here lookin' at that place. They think it was caused by a volcano, or a big underground explosion of some kind—but they don't know what they're talkin' about. Shorty knows all about it, fer he was prospectin' up there in that end o' the valley when it wuz dug, 'way back in '87."

Shorty had laid down his paper, and was listening to the conversation.

"Ain't no mystery about that big hole," he exclaimed. "That

was dug by ol' Sandy MacDougal durin' the Death Valley gold rush. Yuh see it wuz this way:

"Sandy'd jest come over from Scotland, and when he heered they wuz a new gold strike in Death Valley he came out here to git rich. A lotta other folks wuz doin' the same thing.

"Sandy bought hisself an outfit, over at Rhyolite—burro an' pick and shovel an' everything. Wuzn't much of an outfit, but it cost 'im \$17.34, an' he thought that wuz too much.

"A week later Sandy wuz campin' where that big hole is. It wuz jest a little hummock then, an' Sandy decided that since no one else wuz around there it would be a good place to pan fer gold.

"He allus slept on the ground with his wallet under his blanket so's nobody could rob him. But next mornin' when he woke up he couldn't find that wallet. Looked everywhere, an' he wuz still lookin' when some other prospectors come along. They told 'im probably a packrat had run off with it an' took it down in its hole.

"Sandy decided maybe they wuz right, an' he started diggin'. When his grub ran out he packed over to Rhyolite an' got some more. Sandy dug there all summer an' fall and when New Year's come he wuz still a diggin'. An' I guess if he hadn't wore out his shovel an' busted the pick handle he'd be diggin' there yet. Never did git the \$8.66 which wuz in that wallet."

Here and There - on the Desert

ARIZONA

Indian Service Wants Hospital . . .

PHOENIX — Purchase of St. Joseph's Hospital in Phoenix is being considered by the U. S. Office of Indian Affairs. "The Indian Service could make immediate use of the full capacity of the hospital," said Undersecretary of Interior Richard D. Searles. The 192-bed plant has been put up for sale for \$750,000. Searles said the government would have to spend between two and one-half and three million dollars to duplicate it, and it would be four or five years before such an institution could be built. At present, only 100 beds are available in the state for tubercular Indian patients. Four hundred are needed. — *Arizona Republic*.

Crop Acreage Jumps . . .

PHOENIX — Arizona has reached a record for acreage of principal field crops, according to 1952 figures released by the Federal Crop and Livestock Reporting Service. Plantings this year aggregate 1,144,000 acres, which represents a 13 percent increase over the 1,013,000 acres for 1951. The increase is due almost entirely to a very sharp increase in cotton acreage caused by the partial operation of the Wellton-Mohawk project and development of new land for pump irrigation in many of the principal cotton-producing counties. — *Arizona Republic*.

Nuisance Elk Doomed . . .

PHOENIX — A new answer to the problem of marauding elk has been suggested by the Arizona Fish and Game Commission. Special permits will be issued to ranchers in the Munds Park area near Flagstaff to kill adult elk found damaging crops. The plan designates the Munds Park area as an experimental zone in which the new program will be tried. Exact bounds and hunting rules will be determined after the effectiveness of this type of control has been demonstrated. — *Coconino Sun*.

50-Year Land Fight Ends . . .

WASHINGTON — The Interior Department prepared to issue patents which will give to Aztec Land and Cattle Company of Albuquerque title to 98,690 acres of valuable land in two Arizona national forests, after a decision delivered in favor of Aztec by the U. S. Court of Appeals. The land is located in Coconino and Sitgreaves national forests in an area ex-

tending roughly between Holbrook and Flagstaff. It has been in dispute for more than half a century.

Atlantic and Pacific Railroad, forerunner of Santa Fe Railroad, sold a million acres of its holdings to the Aztec Company in 1888. But it never was able to deliver title to more than 900,000 acres, because in 1898 the government withdrew a large section of land in Arizona for a forest reserve. The court decision held that the acreage is part of the original land grant made to the A & P, and now rightly belongs to Aztec through legal sale.

During the years the land was considered national forest, the government constructed roads and other facilities and cut timber under its forest management program. It is possible it will have to reimburse Aztec for the felled trees. Records are being searched to discover what mineral, grazing and homestead rights might lie against the land. These would have to be settled before title could be transferred. — *Arizona Republic*.

Discovers New Natural Bridge . . .

NAVAJO BRIDGE — A previously unknown natural bridge, located in the head of Little Nan-Ko-Weep and just under the rim of Cape Royal on the North Rim of the Grand Canyon, was discovered from the air by Barry M. Goldwater of Phoenix. Only visible in the early morning, the bridge appeared to be of tremendous size. Goldwater

gave Frank Wright of Mexican Hat Expeditions directions to the natural formation, but a five-boat expedition which left July 12 for a 379-mile trip down the Colorado River was unable to locate it. Members of the party had said that if they could locate and photograph the bridge, they would name it for Goldwater, a veteran river runner himself. — *Arizona Republic*.

Arizona Wins More Funds . . .

WASHINGTON — In an unusual action, the Senate voted to include an extra \$6,700,000 in the Interior Department appropriation bill for Arizona Indians. The house had slashed the appropriation for Navajo-Hopi rehabilitation to practically nothing. If the funds remain in the final bill, it means construction work can proceed in the new fiscal year on five Navajo reservation boarding schools, Navajo and Papago roads, irrigation and range improvement projects and reconstruction of Picacho reservoir on the San Carlos Apache reservation. — *Arizona Republic*.



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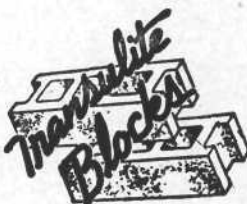
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Ranges Good, But Need Rain . . .

PHOENIX—Arizona ranchers anxiously awaited summer rains, although ranges were holding up well in most parts of the state, and cattle and sheep were in good condition. Many sections received good rains early in June, but the remainder of the month was warm and dry. Only a few acres had much green feed left in July.—*Arizona Republic*.

• • •

MARBLE CANYON — Veteran river men from all over the West gathered here on July 11 to take part in the dedication of a memorial plaque honoring the memory of Norman and Doris Nevills, who resided at Mexican Hat, Utah, previous to their death in an airplane accident in 1949. Nevills was regarded as one of America's greatest rivermen, and had piloted many expeditions on the San Juan, Colorado and other western rivers. The bronze plaque was mounted on the canyon wall underneath Navajo Bridge. Barry Goldwater was master of ceremonies.

• • •

CALIFORNIA

Bill Would Free Indians . . .

WASHINGTON—A bill described as "the beginning of the end of the Bureau of Indian Affairs in California," has been passed by the House and now pends Senate approval. The bill would give California courts, with some minor exceptions, jurisdiction over the state's Indians and Indian reservations. This would exempt California tribes from the nationwide prohibition against selling liquor to Indians. The bill is strongly opposed by the Association on American Indians, which urges it be disapproved "unless fundamental and far-reaching amendments are made." Federal withdrawal is desirable and timely, according to the Association, "but the provisions of the proposed legislation are precipitous, disorderly and unplanned and amount to outright renunciation of the federal obligation."—*Desert Star*.

• • •

Palm Springs Unaffected by Bill . . .

PALM SPRINGS—Agua Caliente Indians, who hold extensive properties in this resort community, are exempted from a bill now before Congress which would remove federal restrictions on all Indian lands in California. Holdings of the Agua Caliente tribe total 33,000 acres and represent millions of dollars of desert real estate. Fear that the Indians would be duped of their valuable lands by shady operators was given as the main reason for the bill's exclusion clause.—*Riverside Enterprise*.

Death Valley Museum Drive . . .

DEATH VALLEY—A campaign to raise funds for a museum in Death Valley National Monument has been launched in California and Nevada by the Death Valley 49ers, and plans for the structure will be furthered at the annual Death Valley Encampment November 8 through 11. "Considering the unique geological and geographical character of Death Valley and the increasing volume of American and foreign visitors, it appears vital to provide adequate housing for the priceless relics and specimens of the area," John Anson Ford, one of the campaign leaders, said. Memberships in the 49ers are being offered at \$1 for an annual membership or \$25 for life membership. Firms may support the aims of the organization by contributing an annual "sponsor" membership.

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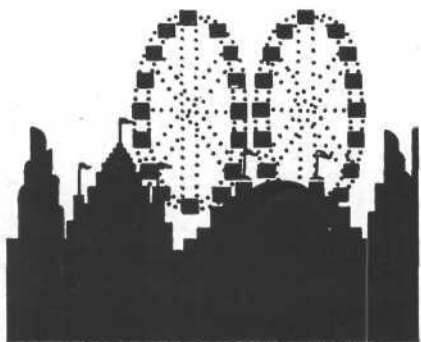
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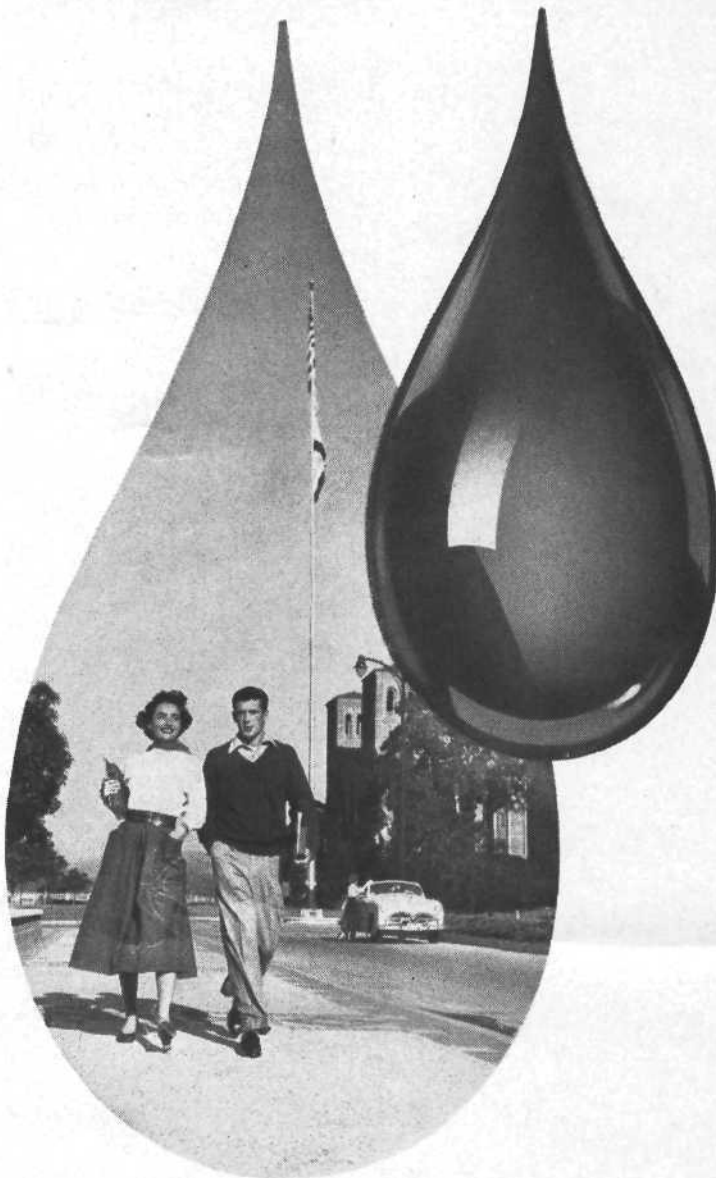
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New Desert Route . . .

THOUSAND PALMS—California State Highway Commission has announced plans to re-route 10½ miles of U. S. Highway 60-70-99 between Garnet and Thousand Palms, in the Coachella Valley. The new route will be developed as a four-lane divided freeway and will parallel the Southern Pacific railroad tracks. It will reduce travel distance about one-half mile, provide easier grades and eliminate many dips and restricted passing sight distances. Traffic over the highway averages 5400 vehicles a day, more than 1300 of which are heavy trucks and buses.—*Riverside Enterprise*.

Hermit of Snow Creek Canyon . . .

RIVERSIDE—Peter Russ, known affectionately by hundreds of Californians as the "hermit of Snow Creek Canyon," died June 30 at the age of 86. The old philosopher, who used to hold visitors spellbound with his tales of adventure, had lived in his stone cabin at Snow Creek Canyon, near Palm Springs, for more than 30 years. Desert poet and artist, he earned a meager livelihood selling his wood carvings to Palm Springs collectors.—*Riverside Enterprise*.

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NEVADA

Treble River Water Request . . .

LAS VEGAS — "Phenomenal growth and development in the southern section of the state now indicates 900,000 acre-feet of water per year can be put to beneficial use," announced the Nevada Colorado River commission. The group will ask that amount instead of the present 300,000 acre-feet in future negotiations in the tri-state compact for division of river waters apportioned to the lower basin states of Arizona, California and Nevada.—*Las Vegas Review-Journal*.

"Battle of Desert" Won . . .

LAS VEGAS — By trading sage brush for grass, the Las Vegas federal bureau of land management has won the "battle of the desert." With a Russian-imported crested wheat grass, the bureau has turned miles of Clark County and southern Lincoln County wasteland into valuable pasture for livestock production. Work on the experimentation phase of the program began three years ago, and the project is expanding as government funds from the Department of Interior become available. The crop is sown like any other wheat planting—by clearing the desert, at 5000-foot elevations, and reseeded.—*Las Vegas Review-Journal*.

Persistent Cricket Caper . . .

BOULDER CITY—Somewhere in the 3,250,000-cubic-yard mass of concrete comprising Hoover Dam, the echo of a persistent cricket, chirping every second for a week, twanged against the nerves of the dam's 400 employees. The volume of noise made by the lone marauder was strong enough to compete with the loud hum of a dozen generators. The insect defied the most exhaustive search by "demolition crews" armed with DDT.—*Las Vegas Review-Journal*.

Halogeton Study Announced . . .

RENO—The noxious weed halogeton has spread over 1,500,000 acres of public lands in Nevada, Utah, Colorado, Wyoming and Montana since it was first found in this country in 1934. To study effects of control methods being used on halogeton in Nevada, the University of Nevada retirement station has announced inauguration of a research program to be carried out in conjunction with the Bureau of Land Management. Careful surveys will be made of the vegetation found on areas which have been treated for control of the weed. Congress recently authorized funds amounting to \$1,645,000 to eradicate the range menace.—*Caliente Herald*.

New Region Chief . . .

BOULDER CITY—E. G. Nielsen will succeed E. A. Moritz as regional director of the Bureau of Reclamation's Region No. 3 when the latter retires August 31, Secretary of the Interior Oscar L. Chapman announced in Washington, D. C. Moritz, regional director since 1943, has served with the federal reclamation program since 1905, three years after the passage of the original reclamation act. Nielsen has been assistant regional director since December, 1950.—*Yuma Daily Sun*.

Austin Wins Cricket Fight . . .

AUSTIN—Still partially surrounded by millions of Mormon crickets which have never been able to break through defense lines and get into the town, Austin turned the battle against the insects over to the U. S. Department of Agriculture after successfully checking the invasion. The city will be kept protected by heavy belts of poisoned bait until the crickets are completely eradicated.—*Reese River Reveille*.

Community Comes of Age . . .

BOULDER CITY—More than 21 years after the first tents were erected for construction of Hoover Dam, Boulder City, Nevada's sixth largest city, has its own municipal administration for the first time. Harold N. Corbin assumed office as city manager July 1. The city previously was under the Boulder Canyon Project of the Reclamation Bureau.—*Las Vegas Review-Journal*.

NEW MEXICO

Approve Indian Hospital . . .

ALBUQUERQUE — The Interior Department has approved a contract providing for participation of the Bureau of Indian Affairs in the construction of a hospital to be used jointly by Indians and non-Indians in Albuquerque. A total of \$1,750,000 was pledged from Bernalillo County bond issues and \$1,500,000 from the Indian Bureau to build the 233-bed institution. The county will operate the hospital, with 100 beds reserved for Indian patients. In turn, the Indian bureau will pay for all Indians hospitalized under proper authorization. Construction was scheduled to start July 15, and the structure is expected to be completed in 18 months.

Elephant Again an Island . . .

LAS CRUCES — Elephant Butte, which lost its island status during the drouth of the past years, is again surrounded by water. Official report recorded 421,667 acre-feet in the lake July 4, compared to 119,825 a year ago.—*Las Cruces Citizen*.



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Another National Monument . . .

SANTA FE—New Mexico may get another national monument if efforts to establish one at Fort Union, 30 miles north of Las Vegas, are successful. The fort served as departmental headquarters for the Union army in the Southwest for 40 years during the frontier period of the region. Congress is considering a bill to permit the National Park Service to accept the site and remaining structures. Approximately 1000 acres are involved. — *New Mexican*.

Apache Fire-Fighters . . .

MESCALERO—"The finest fire-fighting crew I've ever seen in action," Reg Reynolds of the Gila National Forest staff said of his 23-man Apache

Indian firefighting crew upon their return to the reservation after fighting a California forest fire. The Apaches—called "Red Hats" for the protective headgear they wear—are on call at all times to be flown to fires anywhere in the west. Along the fringes of a fire the Indians, armed with shovels and picks and axes, chop down the trees and brush, clear an earthen ring around the fire front and check the flames. Then they move in and put out the fire.—*Riverside Enterprise*.

Sands Status Discussed . . .

ALAMOGORDO—Possibilities and advisability of re-designating White Sands National Monument as a national park were discussed when Conrad Wirth, administrator of the National Parks Service, visited the area in July. One disadvantage to the change was cited: while as a monument White Sands is outstanding, if a park it might be overshadowed by larger parks and consequently receive less consideration. Advantages include a probable staff increase and expansion of facilities.—*Alamogordo News*.

UTAH

Indian Funds for Roads . . .

MONTICELLO—Part of the \$20,000,000 recently allocated by the Senate Appropriations Committee for the U. S. Indian Service's rehabilitation program may be available for the construction of access roads through Utah uranium country. The road from Shiprock, New Mexico, to the Arizona state line will be improved if the appropriation goes through. Funds already are available for an access road through Mexican Hat, Utah, including

a new bridge over the San Juan River there. Construction of the Blanding-Hite road, through some of the most scenic country in Utah, was scheduled to begin August 11. This road should be completed by February 1, 1953.—*San Juan Record*.

Visitor Records Shattered . . .

MOAB—All preceding attendance marks were shattered in June when 3939 visitors registered at Arches National Monument. Superintendent Bates Wilson reported 1232 cars entered the monument, 654 persons called at monument headquarters, and 619 groups camped at picnic areas on the monument grounds.—*Moab Times-Independent*.

Flood Closes Crossing . . .

HITE—Need for an all-weather crossing over the Colorado River at Hite became more apparent after a June flood closed the only crossing between Greenriver, Utah, and Lee's Ferry, Arizona, 340 miles downstream. Arthur Chaffin, operator of the ferry at Hite, reported that the road to the ferry was inundated by flood waters on both sides of the river. Chaffin urged immediate construction of a road approaching Hite from the north. He said the proposed route has been surveyed and that it would be easy and inexpensive to build.—*San Juan Record*.

Population Two . . .

MERCUR—Mercur, Utah, population 2, is the second smallest town in the United States, according to recent census figures. Mr. and Mrs. Helmer L. Grane, who moved there four years ago, comprise the total population. Mercur, at one time a thriving boom town, was depopulated by two fires, a flash flood and played-out mines. Douglas, Arkansas, with a population of 1, edged out the Utah town to become the country's smallest city.—*Utah Historical Quarterly*.

Dinosaur Improvements Planned . . .

VERNAL—Two aspects—scientific and scenic—of Dinosaur National Monument in Northeastern Utah will be aided by new blacktop resurfacing planned for the road leading into the quarry. At the quarry site, reported Conrad Wirth, director of the National Parks Service, excavation work will be stepped up, and a more comprehensive display will be arranged in the museum. Wirth, speaking before a Vernal civic group, reiterated his opposition to the proposed Echo Park Dam, the construction of which, according to the Park Service, would impair the wilderness beauty of the area and possibly endanger the fossil sites themselves.—*Vernal Express*.

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LOS ANGELES

THE *Desert* MAGAZINE CLOSE-UPS

Ray J. Manley comes by his photographic talent naturally. His great-grandfather was one of the earliest photographers in Ohio, working with wet plates and daguerreotypes to photograph such contemporary dignitaries as President William McKinley.

Ray, who took this month's cover picture of the uranium miner, is a native Arizonan, born in Cottonwood in 1921. He was graduated from Clarksdale High School and attended Arizona State College at Flagstaff. From freshman high school days he was interested in photography.

His first job, with Phelps-Dodge Mining Corporation, Clarkdale, combined photographic and chemical assignments. The critical war-time copper situation kept him at this essential civilian work and prevented his immediate enlistment in the air force, but in 1944 he joined the navy. After three months in the photographic laboratory at San Diego, California, he was transferred to Pensacola, Florida, as instructor in the Naval School of Basic Photography.

Both at Phelps-Dodge and in the navy, Manley's work was experimental and pictorial. Returning to Cottonwood upon completion of his service, he entered the free-lance field and joined the Western Ways photographic staff in Tucson five years ago.

Ray married a Swedish girl, Ruth Osterberg, in 1942. They have two children; Carolyn is five, and Alan, 18 months.

The uranium prospector pictured on this month's *Desert Magazine* cover is Bill Hostetter, a partner of Maggie Baker whose unique venture packing uranium-bearing petrified wood out of the Colorado River Canyon area below Navajo Bridge was described by Jay Ellis Ransom in the August, 1949 issue of *Desert*. Maggie, a rockhound for 50 years, came upon the petrified wood location in 1947 and, on a hunch, had a sample tested for uranium. It was found to carry rich values in carnotite—"so hot it would wreck a geiger counter." The wood is being mined by Maggie, her husband Riley and Bill and packed down the cliffs on mules.

Author George Gardner knows intimately the country of the "Lost Lead of the Santa Clara" in Southwestern Utah. As a boy, he worked in his

father's lumber business and often delivered timber to the copper smelter at Shem on the Santa Clara River.

Watching the rich copper ore come down to Shem from the Apex Mine and gathering the colorful azurite specimens which fell on the smelter grounds, young Gardner developed an interest in gems and minerals which has become an engrossing hobby. He spends many spare hours at his lapidary wheel.

He remembers many story-telling sessions around the campfire, when old-time miners and prospectors told fabulous tales of gold, silver and copper bonanzas in the Southwest. The stories of lost mines were particularly interesting, and he wrote some of them down. Riding his father's cattle range in spring, he would look for clues to the lost lodes.

After graduation from Utah State College at Logan, Gardner left Utah for California where he entered the University of California at Berkeley as a graduate student and teaching fellow. He taught high school in Utah for two years, returned to his alma mater to teach, then accepted a teaching post at Brigham Young College in Logan. His magazine articles have appeared in a number of national publications.

H. Jackson Cary, author of "Recent Emigrants from Mexico," the Coati-mundi story which appears in this issue of *Desert Magazine*, was born 31 years ago in Kearney, Nebraska.

He was graduated from Washington and Lee University in Lexington, Virginia, during World War II and, after receiving his degree, entered the navy as an operations officer in the South Pacific. Later he was transferred to that theater's historical section and worked with James Michener, author of *Tales of the South Pacific*, chronicling the naval histories of New Zealand, American and British Samoa and New Caledonia.

Bachelor Cary travels extensively, particularly in old Mexico. For a while he was Tombstone, Arizona, correspondent for the *Tucson Daily Citizen* and now writes for Western Ways Photographic Services in Tucson.

The old adage, "Like father like son," proved true with H. L. Chaffee when he was born into photography 47 years ago at Muscatine, Iowa. His father had a photographic studio in Muscatine, and young Chaffee began taking and developing his own pictures at the age of seven. As a free-lance photographer, he came to Phoenix in 1934 and, with his wife, established a permanent home which was interrupted

only by a four-year return to his birthplace to manage his father's studio.

Chaffee photographed the Coati-mundis for "Recent Emigrants from Mexico" high on the reefs of the Huachuca Mountains in southeastern Arizona. He spent two weeks taking the pictures.

Author Paul Wilhelm, whose experience buried alive in a mine cave-in is told in this month's prize-winning "Life on the Desert" story, is the sole resident of Thousand Palms Oasis in Southern California. "It is a good place to live," writes Paul. "Here I can get in about six hours of writing a day, and here, too, is the opportunity to greet people who drive in over the new county road and lead them under the deep shade of old warrior palms or over copper-colored Indian trails into the solitude of desert hills."

He hopes someday to interest a university or other group in the oasis, to preserve for desert lovers its primitive beauty, wildlife and Indian history.

Paul is not new to *Desert Magazine*. In June, 1951, he described for *Desert* readers the Indian shrines on the Bee Rock Mesa trail near his oasis home, and he is a frequent contributor to the poetry page.

We Were Caught Short!

We planned to tell you about the June 1952

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BUT THE AUGUST-SEPTEMBER

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AUGUST-SEPTEMBER CALICO PRINT also included WHO WAS EL DORADO? (the golden phantom for whom the whole world searched), WILD HORSE KATE AND THE BATTLE OF BOVARD (hilarious Nevada boom camp episode), HAVE YOU TRIED CHIA? (ways with a wild food plant) and GREAT FALLS OF ZION.

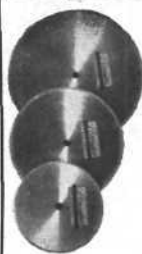
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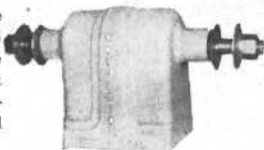
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Amateur Gem Cutter

By LELANDE QUICK, Editor of The Lapidary Journal

It is a problem sometimes whether to laugh or to cry after reading some of the letters we receive. We often wish we could live in the sweet dream world that some of the new rockhounds seem to enjoy. When we are tempted to get mad at a letter we just hark back to our rockhounding infancy and laugh at the naivete of people who write letters like the following, for after all it could have been our own letter many years ago.

A pleasant optimist, whose name obviously is withheld, recently wrote as follows: "I am leaving on a combination vacation and prospecting trip in two weeks. I have a four wheel drive station wagon that I will travel in and sleep in and I have a complete set of maps and prospecting equipment and expect to have quite a bit of pleasure and perhaps some profit. Also I am taking cameras along and hope to get some nice pictures. If you would be interested in acting as my agent to sell geodes, jasper, agate, topaz, turquoise, tourmaline, garnet and other desert minerals I would be glad to have you let me know. I am taking 24 cement sacks with me on this trip and hope to come back with them filled with desert minerals."

Now where this fellow makes his big mistake is taking along only 24 sacks. What's he going to put all the other stuff in after he packs the sacks full of nice tourmaline crystals? Why sure, we'll handle his stuff. We haven't had time to go out lately and get a few hundred pounds of those lovely watermelon crystals of tourmaline and now that we're faceting we'd really like some grass green tourmalines about as thick as our thumb and 6 inches long.

Tell you what you do, Dave (we'll just call him Dave). Only bring me about three sacks of the tourmaline. Don't bring any of what they call "pencils," but just the nice clear ones with no feathers in them at all (cracks to you). Be sure that every one has a termination too (pointed ends).

I don't want too much of the tourmaline because I am really anxious for you to bring me several sacks of the turquoise, say about 6 sacks. Be sure to pick the brightest blue you can get—none of that powder blue stuff but the real robin's-egg blue. Be sure any matrix in it is hair-like and evenly distributed. Maybe you'd better skip the little nodules (lumps) and just bring home the fist size stuff.

They say there isn't much topaz around the desert any more, but if you are lucky enough to run across a spot you'd better load up with quite a lot. Six sacks of good crystals wouldn't be too much. I want to give a sack full to the Faceters of the Los Angeles Lapidary Society for door prizes some night. They've done so much for faceting I'd like to show my appreciation. I hear they like the blue topaz so get some fancy blue stuff for them, will you? I'm willing to pay you as much as 25c a pound for that stuff—if it's good.

I am not too interested in the geodes, but if you find some with ruby crystals I'd like a few, especially if they have inclu-

sions of gold in the crystals. There isn't much of a demand for garnet, but if you find some of the orange ones, about the size of strawberries, it might be smart to bring home a few sacks full.

Rather than bring me any agate I wish you'd save the space for some other stuff you never mentioned, and which you are likely to find because you'll probably have beginner's luck. A fellow wrote in the *Post* not long ago that crystals of all kinds were being found in the new road cuts in San Diego County. If you get down that way and get on one of the new roads you might dig in the bank a little and see if you can find some aquamarine crystals. If they're too green don't haul them home but clamp on to all the good blue ones you can get.

People are not interested in kunzite much any more because it's so hard to cut, but if you run on to any crystals the size of the handle on your pick, toss them in the car for me, will you? I just want a nice specimen piece or two.

Don't get discouraged if you don't find the really good stuff right away, especially on those mapped trips. Remember, plenty of others have used those maps too. But "there's more in the earth than ever has been taken out" I always say, so just look for some virgin spots. You'll have plenty of time to take swell pictures because it shouldn't take you more than two or three days to get the wagon and the bags full of gems.

Just think, our poor friends in the east can't go out on a two week's vacation and come home with enough stuff to open a jewelry store. They have to scratch hard to find a few fossils. We're sure lucky here in California, aren't we Dave?

However, a fellow was in to see me just the other day and he had a wild tale to tell. Said he'd been down in the Chuckawalla Mountains for a week and didn't find one whole geode. Said he'd run into several thousand persons from all over the country and they hadn't found one either. I asked him if he'd found any topaz or tourmaline, and he just rolled around on the floor and frothed at the mouth. I don't know what was wrong with him, but he certainly should not be out on the desert in his condition.

Another fellow was in and he said things were a little poor around San Diego County too because all the rockhounds down there had staked claims to the old crystal mines. He said he was going down to Texas to get some blue topaz because he saw pictures of a fellow showing topaz crystals he had found as big as grapefruit, and no trouble at all—just walk down the dry stream beds and pick them up. It wouldn't seem like so much fun to me however if I didn't have to hunt just a little.

Well Dave, have fun and if you bring me the 24 sacks of stuff I feel reasonably sure I can unload it for you. Keep on the lookout for Titania too. They say no one has found any of that in the desert yet and you just might be the one to locate some.

Gems and Minerals

HORSE CANYON, CALIFORNIA CHOICE AGATE-HUNTING AREA

On the boundary which marks the southern end of the Sierra Nevadas and the northeast extension of the Tehachapi range, there is a 6700-foot peak called Cache Peak. In its shadow is a broad open canyon with a base level of 4000 feet. Officially it is named Cache Canyon, but to gemologists the world over it is known as Horse Canyon. The name is derived from the discovery in 1906 of the fossilized femur bone of a three-toed horse. Some of California's most beautiful agate is found in the area. Seeking some choice specimens, Leader Gerald Backus charted a Horse Canyon field trip for Compton Gem and Mineral Club in July.

COMPTON CLUB SETS FALL DATE FOR ANNUAL SHOW

Compton Gem and Mineral Club, Compton, California, has selected October 4 and 5 as dates for its third annual show. Committee members have selected the city's Veterans of Foreign Wars Hall as the exhibit site.

NEW SEASON'S OFFICERS ELECTED AT JUNE MEETING

Officers for The Earth Science Club of Northern Illinois for the 1952-53 season are: J. E. Farr, chairman; C. R. Hoffman, vice-chairman; M. L. Hunt, recording secretary; W. D. Kelly, corresponding secretary; O. D. Fether, treasurer; H. M. Knight, editor; Mrs. Hazen Bonow, circulation manager; A. Bowers, publicity; Mrs. E. Whitney, historian; Ray Bish, curator, and Mrs. Louise Bish, librarian. A collection of trilobites, associated fossils, fern fossils and miscellaneous rock specimens was exhibited during the election meeting.

CONVENTION ELECTION TIME FOR MIDWEST FEDERATION

W. H. Allaway of Downers Grove, Illinois, was elected president of the Midwest Federation of Mineralogical and Geological Societies at the recent convention. Other officers are A. Hedley of St. Louis, Missouri, vice-president; Mrs. Oriol Grand-Girard of Chicago, secretary; Marjory Scanlon of Chicago, treasurer; Ben H. Wilson of Joliet, Illinois, historian.

An estimated 3000 visitors attended the mineral and geology displays at the federation's 12th annual convention, held July 1-3 at Macalester College in St. Paul, Minnesota. St. Louis Mineral and Gem Society will be host to the 1953 Midwest convention.

SEPTEMBER SHOW PLANNED BY SAN DIEGO SOCIETY

A complete gem cutting demonstration will be given by lapidary students of San Diego Mineral and Gem Society at the group's 15th annual show September 27 and 28 in Spanish Village, Balboa Park, San Diego. The society owns and operates the lapidary school. Special emphasis will be given to San Diego county gems and minerals in exhibits covering the three divisions of the society: mineralogy, mineral resources and lapidary.

ELINOR VON DER LIN TO LEAD HOLLYWOOD LAPIDARY SOCIETY

Elinor Von der Lin was elected president of Hollywood Lapidary Society when members voted at the June meeting. Her board consists of Imogene Wilson, vice-president; Marie O'Brien, treasurer; W. A. Stephenson, past president; Walt Shirey, Margaret Harris and Glenn Elsfielder, directors.

LAPIDARY ASSOCIATION SETS 1953 SHOW DATES

The Lapidary Association has accepted Long Beach Mineral and Gem Society's bid for its first big lapidary show, to be held at Long Beach Municipal Auditorium August 14-16, 1953. The American Gem & Mineral Suppliers Association will act as sponsors.



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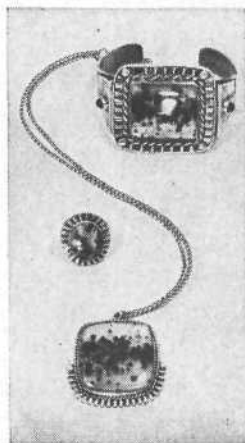


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AMONG THE ROCK HUNTERS

Frank Dennis, one of the co-founders of San Diego Lapidary Society, spoke on the grinding and polishing of flats and slabs on a recent society program. He displayed some of the lapidary machinery which he had constructed during the war.

Carl Brooks, member of San Jose Lapidary Society, California, brought back the prize find of a society field trip to Horse Canyon—an 8 1/2-pound agate.

The Agate Museum in Spring Valley, Wisconsin, was visited by Minnesota Mineral Club. Specimens were explained by Owner T. C. Vanasse, author of *Lake Superior Agate*.

Impressions of the California Federation of Mineralogical Societies' convention at Angels Camp, California, were exchanged by members of Humboldt Gem and Mineral Society at an informal meeting. Nineteen members made the trip.

Colored slides transported the Gem Cutters Guild of Los Angeles to Mexico at a travelogue meeting. Paul Grigsby, who had taken the pictures on a recent trip below the border, related his experiences and told of the many tourist spots he had visited.

"Whitney, Thieme and Allard" — three members of Delvers Gem and Mineral Society, Downey, California, collaborated to present a program on quartz family minerals. Paul Whitney explained the creation and occurrence of the mineral; Mrs. Thieme discussed its use in the communications industry, and Allard showed specimens and cut gems, suggesting how the different quartz varieties should be cut.

After John Tracey visited Long Beach Veteran's Hospital, he spoke before fellow members of Hollywood Lapidary Society urging that they contribute books, magazines and cutting material to the hospital's lapidary group. Patients have a workshop with a 16" saw, 12" blade and a cabochon unit. Rock contributions will be delivered by Tracey. Magazines may be sent to Mrs. Alice Cooley, Chief of Occupational Therapy, U. S. Veteran's Administration Hospital, Long Beach, California.

Ruth Copper Mine at Ely, Nevada, yields 17,000 tons of ore a day. This was one of the copper facts brought out at a recent meeting of Sequoia Mineral Society. Remarks on the featured mineral were illustrated with colored slides.

July meeting of Northern California Mineral Society, San Francisco, was designated "Ladies' Night." The distaff side of the membership told how their interest in the rockhunting hobby began.

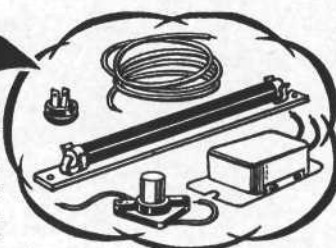
Crystalline diamonds not suitable for gems are classified as bort. Crushed bort is used in making diamond grinding wheels and saws. "Since the government refuses to release any of its stockpile of the material," Joseph E. Fletcher of San Francisco told members of the Gem and Mineral Society of San Mateo County, "and the imports of bort are far below present requirements, much attention is being given to the improvement, conservation and reclamation of bonding materials. Present delivery on diamond wheels takes from 12 to 18 months."

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SAN FERNANDO VALLEY SOCIETY ANNOUNCES SHOW

San Fernando Valley Mineral and Gem Society announces its annual show will be held October 25 and 26 at the organization's regular meeting place, 12240 Archwood, North Hollywood. Although gems and minerals will predominate among displays, the society also has invited member to exhibit other hobby work. Dealers will be present with their displays and merchandise.

During the All Rockhounds Pow-Wow held in Vantage, Washington, field trips were taken to Saddle Mountains, Frenchman's Hill and Badger Pocket for the mineral collectors and to Brown's ranch for artifact hunters.

New officers of the American Federation of Mineralogical Societies, elected at the convention in Canon City, are Thomas J. Scanlon of Chicago, president; Dorothy Craig of Los Angeles, vice-president; J. Lewis Renton of Portland, secretary; and A. L. Flagg of Phoenix, treasurer.

John Grieger of Grieger's mineral supply in Pasadena was interested in the large number of children who would stop by his shop after school to select inexpensive minerals. To aid them, he has published a new catalogue of gems and minerals intended to help students choose their specimens. Representative minerals are listed at low prices.

At the July meeting of San Jose Lapidary Society, Alex Tihonravov exhibited jade mounted in silver, rhodonite and sagenite, and Mr. and Mrs. Gifford Kelly showed cabochons of agate, jasper and sagenite.

The Kingston area of New Mexico was visited by field trip members of Dona Ana County Rockhound Club, when they left Las Cruces to search for agate and opal. A number of fine specimens were found.

Mrs. Erna Clark told of her rockhunting trip through Europe when she spoke at the July meeting of Compton Gem and Mineral Club. She showed a selection of specimens and colored slides.

Art Terry of the Gem Cutters Guild appeared as guest speaker on a recent program of Southwest Mineralogists, Los Angeles. He showed micromount slides of mineral specimens, particularly crystals with inclusions. Many of the crystals were enlarged hundreds of times and showed minute details of form and color.

Annual picnic of Shadow Mountain Gem and Mineral Society, Palm Desert, California, was held in July at the State Park in Idyllwild. Plans for next year were discussed informally.

July meeting was swap time for Orange Belt Mineralogical Society. Members brought trading rocks to the club picnic in Redlands, California, and more than 100 specimens changed hands. Choicest pieces included a large ankhorized antigorite specimen from Rawhide Flat, opalized woods and a slice of tempskya, petrified fern bulb from Oregon.

Victor Arciniega asked members of Long Beach Mineral and Gem Society to bring geodes for him to analyze when he spoke on "How Geodes are Formed."

Edwin Masters, Captain Bruce Smith and Emil Frie planned a Memorial Day weekend field trip for El Paso Mineral and Gem Society, El Paso, Texas. The group visited Reed Ranch, near Hillsboro, New Mexico, and Elephant Butte. Some good opalized wood specimens were found.

Sequoia Mineral Society and Fresno Gem and Mineral Society planned a joint potluck dinner and meeting for August.

Ideas for future field trips were discussed at the July meeting of Wasatch Gem Society, held at the Salt Lake City, Utah, home of Mr. and Mrs. George E. Cahoon.

Pasadena Lapidary Society is planning an exhibit during September and October at the Pasadena, California, public library.

New officers of Rocky Mountain Federation of Mineralogical Societies are W. V. Vietti of Houston, president; Domer Howard of Oklahoma City, vice-president; Kenneth C. Fry of Houston, secretary-treasurer; and Hugh Leiper of Austin, in charge of publications.

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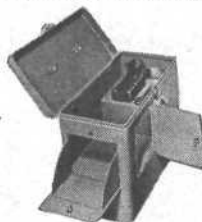
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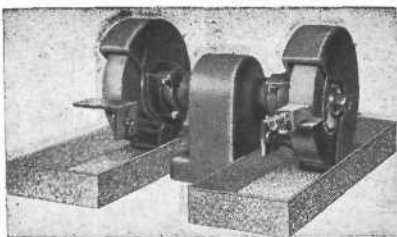


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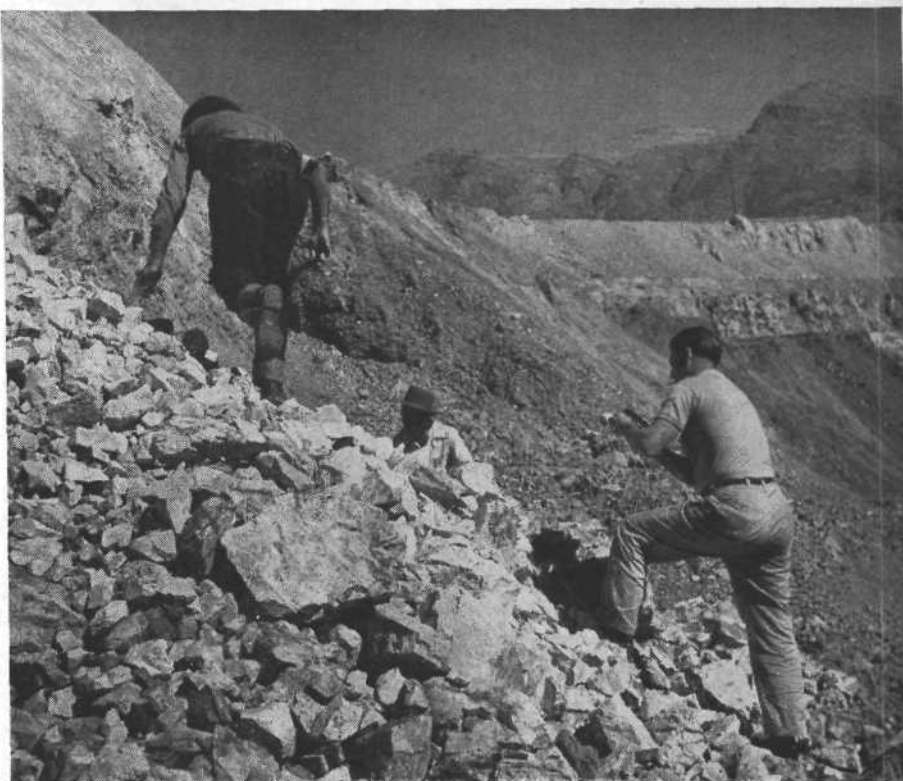
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* The "Pit" at Kennecott Copper's development at Ray, Arizona. Chick Wallace, right, a shovel operator at the mine, guided us in our rockhunting, and we found excellent specimens of native copper, bournite, diabase, chalcotrichite, malachite and azurite.

Gems, Minerals and Mines Along Southwestern Trails

(Claude A. Conlin, Jr., captain of photography and publicity in the Los Angeles Fire Department, and Charles Crosby, a fellow rockhound, covered 2006 miles of Southwest mineral country on a 14-day vacation trip last fall. This is the first in a series of three stories describing the roads Conlin and Crosby traveled, the places they visited, the mineral specimens and gem material they found.)

By CLAUDE A. CONLIN, JR.
Photograph by the Author

WITH SIX weeks' intensive study in petrology, mineralogy and physical geology behind me, and accompanied by a partner who has been an amateur rockhound and lapidary for the past 16 years, my first rockhunting trip was finally underway. Heading east from Los Angeles on a late October morning in 1951, Charles Crosby and I were jubilant. For two wonderful weeks we would escape the hurry and worry of the smog-ridden city. Our destination was Arizona; our objective, rocks, mineral specimens, gemstone material, dinosaur bone—anything we could find that might join our collections or provide cutting material for the long winter evenings ahead.

At sundown we arrived in Quartzite, Arizona. A friendly service station attendant informed us the only real rockhound in town was "Horsepower" Williams, an amiable and enthusiastic gentleman of 60 whom we found to be full of information about what might be obtained locally.

Horsepower, so called because of his knack for repairing electrical devices, wasn't too talkative until Crosby spread out his trading material—polished slabs, geodes, cabochons and faceted gemstones. Horsepower looked them over. Then he disappeared for a moment, returning with a small strongbox which he opened to reveal his

most cherished possession—six quartz crystals with inclusions of native gold in the perfect cubes of the isometric system.

Crosby's hint that he might like to trade or buy one of the specimens brought out two important points: a professor from Stanford University had informed Horsepower only four such crystals with gold inclusions had ever been found, these during gold rush days; and their individual value was at least \$5000. This information immediately closed negotiations as far as we were concerned, but we did accept Horsepower's suggestion to look over the country in the vicinity of Kofa Peak.

We drove south out of Quartzite on the Yuma road 7 miles, turned left on the high pressure gas line road and followed it 5.8 miles to a fork. We veered left and continued another 2.3 miles to a spot which looked like a good camp site. By 10 p.m. we were in our sleeping bags blinking back at more stars than we had seen in months.

Early next morning we rolled out to discover we were camped on a low ridge. To the northeast and not over a quarter of a mile away were the low round hills that our friend Horsepower had described and referred to as the Crystal Hills. We hurried through breakfast, anxious to begin our first day's search.

Quartz crystals lay in abundance on the

surface. Horsepower had warned us that dynamiters in the area had shattered most of the easily obtainable material. But by lunch time we had gathered 30 pounds of excellent specimens. At least two dozen of the crystal forms were double terminated and contained inclusions of iron pyrite in perfect cubical form. We still are wondering whether it actually was gold we saw in Horsepower's specimens!

By early afternoon we were ready for the trip on to Phoenix to see our old friend, Earl Tanner. Our arrival at the Tanners' home inspired plans for another excursion, and the following morning Earl took us 20 miles north to Black Canyon for agate. Crossing the New River we took the first road to the right and drove past the Wrangler's Roost dude ranch 5.2 miles to a broad wash strewn with agate float. Hard and clear, we have since found it to be excellent cutting material, displaying brilliant reds and yellows. The individual pieces were small, none of them more than two inches in diameter, but our judgment in gathering and carrying 50 pounds home proved worthwhile.

Badly twisted and distorted lava-like geodes littered the low hillsides adjacent to the wash. Cutting reveals an internal structure highly agatized but short on color. The pieces we have cut are a rather ordinary pearly gray in color, but their form is unique.

A good day of hunting over, we turned in that night in high anticipation of Earl's promise to take us to the Kennecott Copper Company's development at Ray, Arizona, the following day.

It was a three-hour drive to Ray, where Earl introduced us to Chick Wallace, shovel operator for Kennecott. We couldn't have chosen a better day. It was Sunday, and Chick wasn't working. He guided us to the scene of operations where we spent the remainder of the day looking and digging for specimens. Our efforts by hand amused Chick, who spends six days a week moving the same material, six yards at a time, with his \$190,000 diesel driven shovel.

We did all right with our rock hammers, however, directed by Chick who knew exactly where all the "hot streaks" were located. Our reward for very little work included excellent specimens of native copper, cuprite, chalcotrichite, diabase, bournite, malachite and azurite.

Strip mining is the technique being used at Ray. Ore averaging two percent copper is transported in specially designed trucks which carry 56 yards of material at a time. According to Chick, ore is being removed at the rate of 30,000 tons every 24 hours. With copper selling at 21 cents a pound, this is a profitable operation.

To those traveling true desert style as we were, the Ray golf course is recommended for an overnight camp. Shelter, running water, benches and tables make it a perfect set-up.

We ate an early supper, bade farewell to the Tanners, then busied ourselves the rest of the evening wrapping and packing our specimens to prevent damage on the rugged roads ahead.

(Next month Captain Conlin will continue the story of Arizona gem trails with accounts of visits to the Mammoth Mine at Tiger, Arizona, the "79" Mine at Winkelman and nearby Crystal Cave.)

Two U. S. Forest Service movies were projected for members of Yavapai Gem and Mineral Society at a meeting in Prescott, Arizona. One showed how nature operates its water supply system through clouds, rain, snow, streams, rivers and wells; the other film featured forest service "smoke-jumpers"—air-borne fire fighters.

Several members of Tacoma Agate Club traveled to Red Top, or Teanaway Ridge, Washington, for crystals, blue agate and amethysts. Although few good specimens were found, the group enjoyed the trip through the scenic timber country.

"Come prepared to stump the experts," read the announcement to Sacramento Mineral Society's June meeting. Lapidary experts from the Sacramento Pegboarders Club were invited as special guests to answer members' gem and mineral questions and solve lapidary problems.

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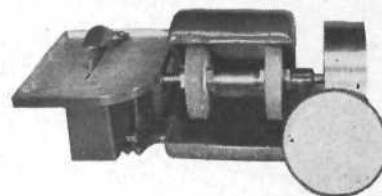
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Wisconsin Geological Society and the Chicago Rocks and Minerals Club held a joint meeting in June at the city park in Wilmington. After a picnic lunch, a fossil-hunting field trip was led by Dr. Gilbert Raasch. The earth-colored paleobotanical specimens had not been exposed long enough to oxidize to a reddish color, and they were difficult to see; but, with patience, a number of fine specimens were found.

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By RANDALL HENDERSON

ON A 4000-mile motor trip in July, Cyria and I followed the interior highways of western United States most of the time—through Arizona, Utah, Wyoming, Idaho, Washington, Oregon, Nevada and desert California.

Our most westerly point was Seattle on Puget Sound—and that was as near as we came to the Pacific Ocean. We kept away from the coastal highways for two reasons: We wanted to get better acquainted with the arid and semi-arid regions of the West, and we sought to avoid the heavy traffic at this time of year on the sea shore routes.

The wheat harvest was just starting in eastern Washington and Oregon as we rolled across the semi-arid hills of those northwestern states. The rain gods had been generous this year to the dry farmers of that region, and they were bringing in record crops. We did not find much terrain in either Oregon or Washington which could be classified as desert—that is, too arid even for dry farming or grazing.

Although we traveled during the peak of the summer vacation period, we seldom encountered heavy traffic. As far as I am concerned, the paved highways of the inland West—U.S. Highways 85, 87, 89, 91, 93, 95 and 395 are the best north and south routes for pleasurable summer vacation travel. They are seldom four-lane highways and sometimes they are winding mountain roads and a little rough in spots. But they are good roads for a summer vacation trip, and if you ask my definition of a vacation road it is this: Good weather, good fishing and no crowded traffic.

Many people do not realize that some of the finest trout streams in the United States are in the semi-arid western states between the Rocky Mountains on the east and the Sierra Nevada and Cascades on the west. And one of the reasons this is good fishing country is that the streams and lakes are seldom over-crowded with fishers.

* * *

Not only are the highways of the interior western states much safer from the standpoint of traffic hazards, but they also are much cleaner than are the roadsides in the zones of heavier travel along the coast.

Since returning home I have made a trip over U. S. Highway 101 between Los Angeles and San Diego—one of the most used traffic lanes in the West. Much of the way the roadsides along this popular route are filthy with debris—bottles, waste paper, lunch boxes, and the worst offenders of all—beer cans. The problem is becoming so critical along this route as to constitute a hazard to life and health. Presumably the California State Highway department sooner or later will have to send out scavenger crews to clean up the roadside gutters—and again the taxes of law-abiding citizenry will be raised to pay for the thoughtlessness of the litterbugs.

One way to avoid the injustice of such taxation would be to assess the brewing industry for the cost of roadside clean-up. My estimate is that three-fourths of the offending debris originates in the breweries.

* * *

A mid-summer motoring trip becomes a sort of game in which the goal of each day's travel is a comfortable lodging place for the night. About five o'clock every evening the "No Vacancy" signs begin to appear on the motels and motor courts along the way—and woe to the traveler who fails to secure his room before nine p.m.

Like many other vacation motorists, Cyria and I have learned that it is always good insurance to have our sleeping bags in the back of the car. Equipped with air mattresses, we find it no hardship to turn off the road to a secluded spot beyond the noise of traffic and spread our bedrolls on the ground.

* * *

During the latter part of July the Hopi Indians at the pueblo of Shungopovi on the Second Mesa in northern Arizona held their famous Shalako ceremonial, the first in many years.

To protect themselves against some embarrassments which had occurred in previous years, the Indian leaders, in announcing the event, issued a polite request that white Americans who attend the ceremonial would "please dress decently and bring no liquor."

This request was necessary because many Anglo-Americans have failed to realize that the Shalako, and many other Indian ceremonials, are religious rituals no less sacred to the tribesmen than are the church services of Protestants and Catholics.

A safe rule for Americans planning to witness the ceremonials at the Indian villages is to dress and conduct themselves as they would in their own churches. The Indian taboo against the taking of pictures at their religious ceremonies is easily understandable if one will realize these rituals are sacred affairs. If you would understand how the Indian feels about it, consider what would be your own reaction if an Indian walked up the aisle in the midst of a Methodist or Catholic service and started taking pictures of the preacher or the priest.

* * *

To those of us who dwell on the desert, September is a welcome month. For September, rather than January, is the beginning of the desert year. This is the month when summer vacationists and summer exiles return—the month when schools re-open and the men of business begin preparations for the busy season ahead.

September on the Great American Desert is the month of home-coming, and of optimism and enthusiasm. Air-conditioning has taken the discomfort out of summer living on the desert—but none of us really enjoy these 115-degree days. We are glad when September comes for we know that the delightful days of our desert fall and winter months are just ahead.

Books of the Southwest

LIMITED INCOME NO CAMPING HANDICAP

Camping for All You're Worth was written for the amateur camper who loves the outdoors but must vacation on a limited income.

Money-saving advice on everything from the building and care of cabin and grounds to lighting, cooking, sanitation and protection are given by Author William E. Swanson, a veteran of many years' camping experience. Step-by-step instructions are illustrated with 100 line drawings by the author.

For those who want to explore the out-of-doors there are chapters on hiking, trails and highways, land and water travel, fishing and boats, recreation areas, wood lore and first aid.

Camping for All You're Worth shows how anyone who has energy and enthusiasm can live an enjoyable yet inexpensive outdoor life.

Published by The MacMillan Company, 154 pages, \$2.95.

CAP MOSSMAN'S ADVENTURES RETOLD IN VIVID BIOGRAPHY

Gone forever is the frontier Burton "Cap" Mossman helped tame and the great open ranges where he fattened his herds. But the thrilling life story of one of the most colorful cowboy-ranchers of the West lives in a biography by Frazier Hunt, *Cap Mossman, Last of the Great Cowmen*.

Mossman's story covers a period of more than 70 years, beginning with the time when he was a mere cowboy and ending with the day he stepped down from his saddle for the last time. During this period he brought law and order to a violent and unbridled country and carved out a vast cattle kingdom numbering over a million head. His exploits capturing outlaws and breaking up rustler gangs read like a western thriller.

Today, at 85, Mossman is resting on the porch of his spacious home at Roswell, New Mexico. But with Frazier Hunt you can ride with him once again through the wonderful years and adventures that have been his.

The book is illustrated by Ross Santee, a Southwestern artist who knows intimately the locale, the period and the people Mossman knew. The three men — Mossman, Frazier and Santee—have together produced a fascinating biography.

Published by Hastings House. 277 pages, \$3.75.

OLD COMANCHE JOHN RETURNS IN NEW NOVEL

Oh, gather round ye teamster men
And listen to my tale
Of the worst side-windin' varmint
That rides the outlaw trail.
He wears the name Comanche John,
And he hails from old Missou,
Where many a Concord coach he stopped,
And many a gun he drew.

Each time the quick-shooting, soft-hearted Robin Hood of the West, Comanche John, robbed a bank or stage coach, someone would add another verse to this already well-known ballad. Every sheriff west of the Mississippi wanted not only to hang him, but also to author the final verse and "git famous."

Comanche John was first introduced by Author Dan Cushman in *Montana, Here I Be*. Now he is back in Cushman's new novel, *The Ripper from Rawhide*.

This time the humorous, bewiskered John is on the trail of a million dollars' worth of gold somewhere at the bottom of the Yellowstone River. His clue to the sunken treasure is a rock—"just plain dumpite, not a speck of gold in it"—entrusted to him by a dying man. Of course there is a villain, Gar Robel, and when the ring-tailed ripper from Rawhide Mountain tangles with him and his cutthroat mob, the action is full of daring and gusto—the authentic atmosphere of a vigorous frontier.

Published by MacMillan Company. 196 pages. \$2.50.

NEW EASY GUIDE BOOK FOR STUDENT OF STARS

It seems the heavens are nearer and the stars shine brighter over the desert. Many a camper has lain awake in his sleeping bag at night, gazing upward and wondering about the fascinating celestial display.

Chances are at one time or another he started to study the stars. But, if he is like most amateur star-gazers, he advanced no further than the Big Dipper. Astronomy books just didn't seem to make sense. It was difficult to sustain interest in constellations represented as involved shapes which didn't look like anything and bore no relation to the names.

In *The Stars*, author H. A. Rey has created a revolution in practical star recognition. He has replaced the old geometrical shapes—meaningless and confusing—with logical outlines which

actually represent the intriguing names of constellations.

"All I did," says Rey, "was try various connecting lines between the stars of a group until I got a shape which made sense. What surprises me is that nobody has done it before. The basic idea is so simple!"

In addition to the new constellation drawings, there are a complete series of easy-to-read star charts for any date and hour of the night, a table giving the positions of the planets and a chart explaining how to tell time by the stars.

The remarkably clear text with many diagrams and a sprinkling of Ray's irrepressible humor gives a new sparkle to the stars and for once makes the mechanics of the universe intelligible even to the beginner.

Published by Houghton Mifflin Company. 144 pages, innumerable charts, diagrams and illustrations. Index, bibliography. \$4.00.

HOW TO BRING DESERT BEAUTY INTO YOUR HOME

The desert is a treasure chest of weird life forms nature has created with wind, sand, sun and water. Tatsuo Ishimoto, author of today's standard flower arrangement textbook, went out into this arid land to find much of the material for his latest book, *The Art of Driftwood and Dried Arrangements*.

"Here are the bare bones of nature herself," Ishimoto explains in his foreword. In the 143 pages of photographs and simple instructions which follow, he explains how to transform weathered stones, wood, branches and seed pods into attractive table arrangements.

Published by Crown Publishers, 143 pages, halftone illustrations. \$2.95.

"Fun at a very small cost," is what Frances Bostwick calls her hobby—combining dried desert forms in attractive table arrangements.

In a small portfolio of photographs published in Palm Springs, residents of California's Coachella Valley will learn how to arrange the spathes, blossoms and tiny "suckers" of the Date Palm, combining them with dried stalks of the desert primrose or the fleshy leaves of succulents. Arranger Bostwick shows all desert dwellers how to bring the smoke tree branches, wild mustard, Joshua tree bark, sandstone concretions, rocks, screwbean pods, buckwheat and other life forms in from their backyards for unusual home decorations.

Wood and Weeds is priced at \$1.50 at the *Desert Magazine Book Shop*. California buyers should add three percent sales tax.

Books reviewed on this page are available at *Desert Crafts Shop, Palm Desert*

MEET YOUR DESERT NEIGHBORS

"A thousand wonders are calling; look up and down and around about you."—John Muir.

The arid regions of the great American Southwest are populated by thousands of fascinating desert plants and animals. Some of them are beautiful, some are plain—all are interesting creatures who live in a world of sparse vegetation, little water and intense heat. To the nature lover who knows their names, their habits and personalities, and understands how they have adapted themselves to their

environment, these desert neighbors become friends.

Here are books that belong in every nature lover's library—books for him to read and take along on desert trips to identify the plants and wildlife he meets. Written in non-technical language, they are intended specifically for the layman who would become acquainted with the more common—as well as the most unusual—of his desert neighbors.

W3 DEATH VALLEY HANDBOOK, Geo. Palmer Putnam. Supplements *Death Valley and Its Country*, with checklists on plants, birds, mammals, and notes on climate and rocks. History 1844-1937 in chronological form. Endmaps.....\$2.00

W4 DESERT PARADE, Wm. H. Carr. Well illustrated guide to desert plants and animals, with explanation of deserts and adaptation of wildlife. 74 photos, map.....\$2.50

W5 DESERT WILD FLOWERS, Edmund C. Jaeger. Fine handbook on desert flora, almost 800 species described and illustrated by line drawings or photos. Includes material on discovery and naming of plants, animal associations, Indian and pioneer uses, explanation of botanical names.\$5.00

W7 FIELD BOOK OF SNAKES, Schmidt & Davis Nature Field Book series. A book the amateur can turn to for simple description and identification of United States and Canada species. Life history, behavior, ecology. Four colored plates, 103 drawings, 82 photos from life. Fourth ed.\$3.95

W8 FIELD GUIDE TO WESTERN BIRDS, Roger Tory Peterson. Method of field identification, especially helpful to layman. Profusely illustrated with drawings showing characteristic markings observed in flight. Field-marks, size, manner of flight, voice range. 40 pp. halftones, 6 pp. full color\$3.50

W9 POISONOUS DWELLERS OF THE DESERT, Natt N. Dodge. "... should become as much a part of the kit of any desert visitor as his canteen." Description and habitat of giant desert centipede, scorpions, black widow spiders, kissing bug, bees, Sonoran coral snake, rattlers, Gila Monsters, and others. First aid. Illus, index, paper \$.50

W12 FIELD BOOK OF WESTERN WILD FLOWERS, Margaret Armstrong in collaboration with J. J. Thornber, A.M., Prof. of botany, Univ. of Ariz. This is a popular handbook for those who love wildflowers. 500 illus. in black and white. 48 color plates, 596 pp.....\$5.00

W13 THE CACTI OF ARIZONA, Lyman Benson. Scientific or popular names given to plants. Technical terms reduced to minimum but arrangement is formal. Illustrated by many photographs and line drawings—five in full color. Distributional maps provided for sixty plants. 183 pp.....\$4.00

W14 THE VOICE OF THE COYOTE, J. Frank Dobie. Dobie was 20 years gathering material for this "new kind of natural history." Factual, sympathetic and an appeal for more humane extermination of the coyote. Illustrations, index, biblio, 385 pp.....\$4.00

W16 WILD PALMS of the California Desert, Randall Henderson, Editor of *Desert Magazine*. Most interesting and descriptive stories of the wild palms that grow in—Palm Canyon, Andreas Canyon, Fern Canyon, Eagle Canyon. Photos. Map.\$.50

W17 FLOWERS OF THE SOUTHWEST DESERT,

Natt N. Dodge. Written for those who, lacking a scientific knowledge of botany, would still like to learn the names of the more common species of desert flowers and shrubs. Both the scientific and common names of 145 species are given. 110 Illus, paper cover.....\$1.00

W17A FLOWERS OF THE SOUTHWEST MESAS,

Pauline M. Patraw. Identifies by an easy-to-follow color key, the common plants of the Pinyon-Juniper Woodland extending from about 4500 to 7500 feet in elevation. Descriptive drawings by Jeanne R. Janish. Paper cover, index, 112 pp. \$1.00

W17B FLOWERS OF THE SOUTHWEST MOUNTAINS, Leslie P. Arnberger. Third in the

triad of flower field books published by the Southwestern Monuments Association. Takes the student from the highest Mesa elevations to away above timberline, identifying the more common and beautiful flowers. Illus., paper cover, index, 112 pp.\$1.00

W18 OUR DESERT NEIGHBORS, Edmund C.

Jaeger. A fascinating book of a naturalist's experiences with the jackrabbit, the packrat, the coyote, the canyon wren, the sidewinder, and scores of birds and animals and reptiles of the Southwest Desert. Illus. Index, 239 pp.....\$5.00

W19 ARIZONA CACTUSES, W. Taylor Marshall.

Handbook on cactus written in non-technical language for those interested in an elementary knowledge of this plant and its many species. 111 pp., illus., paper cover.....\$1.00

W20 WILDLIFE IN COLOR, Roger Tory Peterson.

This is a picture book for any one who loves the outdoors. Trees, flowers, birds, butterflies, fish and other wild life. 450 full color illustrations. Index, 183 pages.....\$3.00

W22 REPTILES AND AMPHIBIANS, Federal

Writers' Project. Collection of brief descriptions of all forms of reptiles and amphibians. 120 candid camera photos, descriptive charts and map of distribution, index, 242 pp.....\$3.25

W23 NATURE'S WAYS, Roy Chapman Andrews.

Comprehensive presentation, with "Believe-It-or-Not" fascination, of how Nature's creatures adapt themselves for survival. Illustrated with black-and-white photographs and full-color paintings by Andre Durenceau. Index and classified cross-index. 195 pp.\$3.75

W24 AUDUBON'S BIRDS OF AMERICA, Popular

Edition. The best of the naturalist's famous paintings in a handy-sized edition. 288 full-page, four-color plates accompanied by concise descriptive text. 320 pp.\$2.95

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